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ROYAL COMMISSION ON MATTERS OF HEALTH AND SAFETY
ARISING FROM THE USE OF ASBESTOS IN ONTARIO

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of North America

MR. T. LEDERER, Government of Ontario

MR. D. STARKMAN, Asbestos Victims of Ontario


MISS L. JOLLEY, Ontario Federation of Labour

MR. N. McCOMBIE, Injured Workers Consultants

180 Dundas Street
Toronto, Ontario
Thursday,
February 18, 1982
and

Friday,
February 19, 1982

VOLUME 35 A



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ROYAL COMMISSION ON MATTERS OF HEALTH AND SAFETY

ARISING FROM THE USE OF ASBESTOS IN ONTARIO

VOLUME 35 A

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Volume XXXV

THE FURTHER PROCEEDINGS OF THIS INQUIRY
RESUMED PURSUANT TO ADJOURNMENT

APPEARANCES AS HERETOFORE NOTED

DR. DUPRE: Good afternoon, ladies and gentlemen.
Today we are here to listen to the testimony of Mr. James Reis, who I believe, Mr. Hardy, is appearing as the witness for the A.I.A.?

MR. HARDY: That is correct, Mr. Chairman.

DR. DUPRE: Before I brief the witness and have him sworn in are there any matters that any counsel here wish to raise?

MR. LASKIN: Mr. Lederer wished to raise one matter, Mr. Chairman.

DR. DUPRE: Please, counsel.

MR. LEDERER: Thank you, Mr. Chairman.

I only wish to indicate to you that since my initial appearance here I have been retained to act for the Workmen's Compensation Board as well as for the Government of the Province of Ontario. It is not entirely clear to me what position Mr. McNamee took before you with respect to the Board. However, I thought it important to indicate to you that I do have that specific retainer and will be acting for them as well.

I don't...I suspect that it is not necessary for them to have standing on their own in view of my presence here

MR. LEDERER: (cont'd.) for the Province of Ontario as well, and since they are really an agency of the provincial government in any event.

However, again I thought it important to clarify that point with you.

DR. DUPRE: Well, I would reply to that, counsel, that as far as the Commission is concerned the question really of what constitutes the Government of Ontario is perhaps something that is best left to the Government of Ontario to determine.

MR. LEDERER: Despite seven years of direct employment with them, it remains a mystery to me as well.

DR. DUPRE: So unless there are any overwhelming objections from anyone here I would take it for the purpose of this Commission that the Government of Ontario, for the purpose of this inquiry, should be as the Government of Ontario defines itself. Is that fair enough?

MR. LEDERER: I don't know how the Government of Ontario defines itself. I think, speaking seriously, for all intents and purposes that's as well we proceed in that way and should there be any problem, I will be the first to advise you and we can make whatever adjustments at that time.

DR. DUPRE: That will be most agreeable to the Commission, Mr. Lederer.

Any other matters?

MISS JOLLEY: I wonder if we could sort out what exactly is going to happen tomorrow morning?

DR. DUPRE: Tomorrow morning, Miss Jolley, at ten o'clock, we are scheduled to meet and indeed will meet for the purpose of Dr. Kotin's testimony, which he is scheduled to appear at ten o'clock tomorrow morning.

MISS JOLLEY: And our understanding is that he is not going to appear and we wonder if we could not deal with that

MISS JOLLEY: (cont'd.) now so that we don't have to...

5 DR. DUPRE: Miss Jolley, the Commission's answer to that is that whatever understandings are floating around at the moment, the importance of Dr. Kotin's appearance here, in terms of his relevance to our work, is such that we are going to take cognizance of his appearance or otherwise at the time, ten a.m. tomorrow morning, when he will in fact either be here or not be here.

10 Is that fair enough?

Any other matters?

Well, then, may I please greet, on behalf of the Commission, the president of the Asbestos Information Association, Mr. Reis.

15 Mr. Reis, sir, if you would kindly allow Miss Kahn to swear you in?

JAMES F. REIS, SWORN

EXAMINATION-IN-CHIEF BY MR. HARDY

20 DR. DUPRE: Thank you, Mr. Reis.

Mr. Hardy, your witness.

MR. HARDY: Yes, sir.

25 I would just like to state for the record that the Asbestos Information Association of North America appreciates the opportunity you have given us to have Mr. Reis come up and speak to you as part of your examination of issues other than the medical issues related to phase two, regulation setting.

Mr. Reis is the president of the Asbestos Information Association, and it's a position he has served since their last annual meeting this past fall.

30 He has been in the asbestos business for about eighteen years now, and therefore has a good deal of familiarity with the matters he is going to be speaking about today.

5 MR. HARDY: (cont'd.) Rather than lead him through any sort of question and answer, I think Mr. Reis has a number of things he would like to relate to the Commissioners, and I'll just turn it over to him.

DR. DUPRE: Mr. Reis, please proceed.

THE WITNESS: Okay.

10 Since Tim has already taken at least part of my introduction, maybe I'll pick up somewhere in the middle.

10 It's one day short of a year ago that Dr. Harrison Rhodes, representing the Asbestos Information Association, testified in phase one of the hearings, and at that time Dr. Rhodes covered a number of subjects and his testimony was followed by some questions from the Commission, and the Association provided some information.

15 This afternoon I would hope to update that information as far as markets and uses of asbestos. I would like to cover a number of areas as far as what has developed in the industry over at least the past fifteen years - methods of handling, improving handling of both asbestos and asbestos products - and then hopefully finish up with some comments as far as the Association's recommendations or suggestions to the Commission on areas that we see that action should be taken.

20 If I could start with the slides? Yeah, I need the slides and the lights...just take them in the order that they are up there.

25 I have four slides here to help you understand the asbestos industry, and I hope I can eventually end up bringing it right down to the Province of Ontario.

30 This slide represents the usage of asbestos fiber throughout the world, the major using areas. Although the tonnage has changed somewhat, the percentages haven't changed anywhere near that amount and just for your understanding, Canada accounts for one point four percent of the asbestos fiber used in

THE WITNESS: (cont'd.) the world.

Can I have the next slide?

5 I have copies of these that I will leave with the Commission.

As Tim mentioned, I have been in the asbestos industry for eighteen years in various sales and marketing functions. Everything that you read as far as where asbestos fiber is used talks about three thousand uses. In my eighteen years I haven't
10 come close to being able to identify those three thousand uses, and these are the major categories that have been used by the industry for years in identifying how asbestos fibers went into the marketplace.

15 The major consumption area on a worldwide basis is asbestos cement - sheet, pipe and shingles, followed by the various flooring products and friction materials, and then the product lines get smaller.

The reason for that, basically, is that the products in the lower-use areas represented more specialized products that are used mainly in the developed economies.

20 Can I have the next slide?

These figures represent asbestos usage in the United States in 1980. The figures we submitted to you last year were based on U.S. Bureau of Mines figures, and I think dated back to 1978 or 1979. In 1980, there was roughly three hundred and sixty-nine thousand tons of asbestos used in the United States,
25 the major categories being, again, asbestos-cement pipe, flooring products, friction materials.

Could I have the next slide?

Now, as far as available figures, this is about as close as I can bring it to the Province of Ontario, and this is Canadian consumption of asbestos in 1980.

30 Asbestos-cement pipe and shingles accounted for

THE WITNESS: (cont'd.) roughly twenty percent.

The figure for the United States, since we can't put the slides side-by-side, was twenty-one percent.

The second major using area of asbestos was in friction materials, and in Canada that accounted for approximately six thousand tons, or ten and a half percent.

The third major area of flooring products accounted for about twelve thousand tons, and that's about twenty-one and a half percent.

DR. DUPRE: Mr. Reis, may I ask you about those figures?

When I look at Canadian consumption of asbestos, just to take the first example, A-C pipe, is what I am looking at here the number of metric tons of asbestos that were used in Canada in 1980 in the manufacture of A-C pipe, or am I instead looking at the end product, of the amount of A-C pipe?

THE WITNESS: Okay. You are looking at the tons of asbestos, raw asbestos, used in the product. Right.

DR. DUPRE: That were used in the manufacture of A-C pipe in Canada?

THE WITNESS: Right. As a rule of thumb for pipe, you could say that pipe is roughly fifteen percent asbestos, so you can calculate out the tons of pipe that produced. It varies from manufacturer to manufacturer, and it varies from the type of pipe to type of pipe.

The one comment I can make about the Ontario usage of asbestos in the Province of Ontario, it represents as far as we can estimate about twenty percent of that total - somewhere between ten and eleven thousand tons. As I think you will probably have reported to you in some of the work that your consultants or your outside researchers are doing, the major use in Ontario is now friction materials. This is use of raw asbestos fiber.

5 DR. DUPRE: May I ask if the A.I.A. is the source of a data refinement that would show Canadian consumption by type of asbestos for each of these processes?

10 THE WITNESS: We could solicit from our Canadian members, or from anyone else in the Association for that matter, their feeling on it. I can give you my own estimate based on my experience and that pipe figure probably contains a few tons of pipe that were produced in 1980 at the...while the Johns-Manville pipe plant was still running...so there's probably a little bit of blue fiber in that. But other than that, I would guess it's virtually all chrysotile fiber. I would say today that...I should make sure I'm right...I would state today that just about everything used in Canada is chrysotile.

15 DR. DUPRE: But you may or may not know that Dr. Bragg, of course, is trying to pursue this matter...

THE WITNESS: Yes.

20 DR. DUPRE: ...through a questionnaire. The purpose of my question was just a shot in the dark in case there happened to be some off-the-shelf estimates at A.I.A.

THE WITNESS: Okay.

That's all I need for that now. I can switch to the thirty-five millimeter.

25 The three major uses that constitute almost ninety percent of North America's asbestos usage are asbestos-cement pipe, friction materials and flooring products. Asbestos has been used for over fifty years in asbestos-cement pipe products to produce what is considered to be a lightweight, durable, very flexible, easily-installed piping material.

30 In October of 1979, the Environmental Protection Agency and the Consumer Products Safety Commission in the United States published an advanced notice of proposed rule making requesting anyone who was interested to respond to a number of

THE WITNESS: (cont'd.) questions that they were trying to answer as part of their rule-making process.

They received somewhere over one hundred responses from various segments of industry and other interested parties, and I have taken a few of those responses today to try and help the Commission understand how people other than the asbestos industry themselves look at themselves.

These are people who have the choice of using or look at these products. These are people who have the choice of using asbestos cement versus plastic versus clay tile, reinforced concrete or whatever other, ductile iron, whatever other piping material they would like to use.

One of the responses to the EPA/CPSC advance notice of proposed rule making came from the California/Nevada section of the American Waterworks Association. I have excerpted a copy of this...or a statement from this report. I will leave copies of these entire responses with the Commission.

The California/Nevada section of AWWA states:
"We believe that any real health hazard due to the use of asbestos-cement pipe should be recognized and dealt with appropriately. However, a review of the literature on a nationwide basis falls far short of presenting clear evidence that asbestos fibers in domestic water supplies constitute a health hazard."

They finish up by saying:

"These utilities have installed the asbestos-cement pipe because of their experience and evaluation that the asbestos-cement pipe will be significantly more cost-effective than alternative types of pipe. Any regulations restricting the use of asbestos-cement pipe should carefully acknowledge a cost

THE WITNESS: (cont'd.) "evaluation which thoroughly compares all costs, including all liabilities and all benefits resulting from regulations."

There is another letter that has been recently distributed and this is from the Environmental Protection Agency's Atlanta Regional Office, and in the Atlanta Regional Office they were dealing with a problem that occurred down in Lakeland, Florida, and in response to the community's questions to the Environmental Protection Agency, the Agency responded that, in nonaggressive waters, as far as listing piping material in order of risk, that they rated asbestos-cement pipe as having the least risk associated with it, and then they proceed to categorize the other types of piping materials.

We will submit a copy of this letter, as well, to the Commission for your records.

The other category, as far as asbestos-cement, is asbestos-cement shingles and sheet, and this is just an example of how these materials are used. This is an asbestos-cement siding material used on a residential home.

The second category...and as I mentioned earlier, probably the most important to Ontario and industry in Ontario... is the friction materials.

Asbestos has been used since the early nineteen hundreds in friction materials in both textile form and more recently in raw fiber form.

The use of asbestos in these materials has evolved over many years, and these friction materials go far beyond the automotive or vehicular industry.

There are manufacturers of friction materials who make only industrial products that would be used in off-the-road equipment not only for braking of a vehicle, but also for control of moving parts in a heavy-duty crane. You will find

5 THE WITNESS: (cont'd.) asbestos friction materials
used in elevators in many instances, and I guess the point that
has to be made here is that the vehicluar use is probably the
easiest one to deal with. When a manufacturer is working with
asbestos fiber and making a brake pad or a brake segment for a
standardized vehicle, and maybe turning out fifty thousand parts
a month or thirty thousand parts a month, once some reformulation
is done they have a standard part that they can work with. When
10 you are dealing with a specialty piece of equipment where many of
these friction materials are used, each one is designed and
engineered separately and at the very most you may turn out one
thousand, two thousand, five thousand parts, and changes in these
industries come very slowly because of the concern and the very
sensitive area of use of these products.

15 The other major area of use in North America is
flooring products. This happens to be sheets of flooring products.

20 The process here involves the mixing of asbestos
and a latex rubber in a paper-making operation, making a basic
paper, taking that paper then and putting layers of vinyl, printing
a pattern in the wear layer of vinyl in the product to make a
flooring product.

25 It should be pointed out here that the asbestos
in this product is on the backing and is not in the surface area
of the product, so the chance for exposure, certainly on a consumer
basis, are nonexistent.

DR. DUPRE: May I ask you a question on that, Mr.
Reis, in case you can enlighten me?

30 I take your point which I have heard made by a
number of individuals, including some not as closely associated
with the industry as you, that asbestos in floor tile is...let's
put it this way...so totally encapsulated that it will probably
never pose a consumer hazard. Yet I understand that...I would

5 DR. DUPRE: (cont'd.) like you to set me straight on this...that floor tile that has been manufactured on this nonasbestos material has, in recent years, made very remarkable incursions into the market for asbestos floor tile.

10 Does this...is this so? Have you had increasing competition from nonasbestos floor tile products, and if this is so is this perhaps in any way attributable to a general sense of public apprehension about asbestos which, whether it is warranted or not by scientific facts, has to be a very real market problem for the industry?

THE WITNESS: Okay. You have asked more than one question there, I think.

15 DR. DUPRE: I often spin out several in one sentence. My apologies.

THE WITNESS: I guess I have a couple of points to make. You were talking floor tile there. This product is what is called rollgoods flooring. We grew up calling it linoleum. It is a roll. It is a sheet made either in a six foot width, a nine foot width or a twelve foot width.

20 It was an asphalt-impregnated material at one time. The industry then went to putting an organic paper backing on it, which had problems...if you have ever seen a joint in a flooring product where they have had to leave a seam in the summer, the two materials because of expansion actually push together and rise, and in the winter contraction leaves a gap there.

25 The old sheetgood flooring product could not be used below grade wherever there was moisture, because it would just rot and your backing would deteriorate.

30 So the flooring industry, somewhere in the mid-nineteen fifties, started to develop a product that they later ended up using as the major backing material for this flooring, and that is this asbestos-latex paper. It has significant

5 THE WITNESS: (cont'd.) advantages over the past materials. It has dimensional stability, it doesn't have the expansion-and-contraction problem, it doesn't have the rotting-below-grade problem. That is one product, sheetgoods flooring.

10 The second area, and the one I think you had asked your question about, is floor tile. These are twelve-by-twelve tiles made of maybe fifteen or twenty percent polyvinylchloride resin and then filled with calcium carbonate...maybe between five and fifteen percent asbestos...and the use of pigments to color it and various other processes to create patterns that the manufacturers feel would be of interest to the public.

15 This contains asbestos all the way through it. It's a homogeneous mixture of all of these materials. They are made by two completely different processes.

20 A couple of things have happened over the years. This material could always be put below grade, provided you had the proper adhesive. This had no rot problems or anything else, so floor tile was used for years where the sheetgood flooring could not be.

25 When they came with the asbestos-latex backing, the sheetgood flooring business started to make tremendous inroads into the floor tile business. You can take a look at the major manufacturers in the U.S. and Canada and look at their product mix and what has happened. At one time...and I have to go back... in the late nineteen-fifties, early nineteen-sixties, I remember seeing figures for that period in which there were maybe two hundred and twenty, two hundred and thirty thousand tons of asbestos used in floor tile. If you saw the numbers I put on the board...I don't even remember now...it's somewhere around fifty thousand in the United States.

30 At that time there was virtually no asbestos used except for the introductory products in the sheetgood flooring

THE WITNESS: (cont'd.) business, and that business has now eaten into the floor tile business in...well, in all of North America, for that matter.

So, number one, that has happened, and then secondly, and the point I think that you are really interested in, yes, there are concerns on the part of the flooring manufacturers that the perception that their product contains asbestos may concern the public, and they have looked very actively for substitutes.

In the floor tiles business, they have found some substitutes, although there continues to be an asbestos-filled floor tile or an asbestos-reinforced floor tile and it still tends to be the major choice for heavy, commercially-trafficked areas.

In the sheetgood flooring business there are substitutes that are being introduced in Europe...fiberglass interlayers, synthetic-type backing materials. None of these have been adopted by the North American flooring industry. They are experimenting with it and they have some very real problems.

One of them I'll point out. For fiberglass, for instance, fiberglass actually turns out to be more dimensionally stable than the asbestos-latex backing, and that made everybody enthusiastic. There's only one problem - we build houses with a wooden sub-base floor in the United States, and that isn't dimensionally stable and we ended up with the flooring trying to hold the house together if the house moved a little bit, and the flooring products ended up splitting.

So as I say, the product was introduced from Europe and in Europe most of the houses are built on concrete slabs - or a good many of them are - and the flooring product was not used in the same way over there.

That's a long answer to your long question.

The other major areas of use, although not as widely up in Canada, asbestos roofing felts. These are asbestos

5 THE WITNESS: (cont'd.) papers that are then saturated, coated with asphalt, to make a built-up roofing product. Competitive products have been around for years. The organic roofing felt presents the same problems that the organic flooring backing did...lacks dimensional stability, rot-resistance, roofs that were built up using built-up asbestos roofing felts are usually bonded for twenty years or more and this was never done for the organic roofing materials.

10 Fiberglass felts are gaining some use in this area.

The other thing I would point out to the Commission and anyone who is interested, that these were commercial built-up roofs for the most part. You can go into your local hardware store and buy tarpaper and I can guarantee probably nine hundred and ninety-nine thousand out of a million times that it would be an organic material. It would not be an asbestos-type material. These are usually only sold to built-up roofing contractors and used in commercial areas, not in residential areas.

15 So the felt that you see being put under shingles on your roof would not be this type of product.

20 The accompanying product that is widely used is an asbestos-filled asphalt roof coating, or flashing cement.

Again, digging into the responses from various manufacturers of these products in the United States to the Environmental Protection Agency, this one is from Chevron Research Company:

25 "Asphalt and palmra-based industrial, maintenance and recreational surface coatings containing asbestos provide significant protection at a reasonable cost. We do not know of any satisfactory economic replacement for asbestos in these coatings".

30 This is an area where asbestos continues to be used and as Chevron has stated, I know of no widely-accepted

THE WITNESS: (cont'd.) substitute.

DR. UFFEN: Asbestos protection, is that the expression you used?

THE WITNESS: They are usually referred to as protective coatings or...

DR. UFFEN: Protective against what?

THE WITNESS: Water infiltration in roofing applications, as maintenance materials...

DR. UFFEN: Not as fire...?

THE WITNESS: No, although there is a different fire...interestingly enough, there is a different fire rating for the asbestos-filled coating versus the nonasbestos-filled coating. There is a higher fire rating for the asbestos-filled material because basically the asbestos is put in there to build viscosity and provide the various radiological properties that are needed, and what happens is that if there is a fire the asbestos-filled coating resists running and carrying the fire and carrying flame along with it, whereas the nonfilled coating has a tendency to flow a lot more readily and it was something that I was not aware of until the roofing people told me that.

Basically the fiber is in there to, again, provide a fibrous reinforcement and a uniformity for this material as the asphalt dries out and hardens, to resist cracking and provide that layer of protection.

One other area where asbestos has been used widely, and I think it might be of interest as far as why asbestos is used, has been in the chlorine manufacturing industry. This is an electrolytic process for the production of chlorine and caustic soda.

I would like to just read the comments of Dow Chemical in this area:

"The only significant use of asbestos within the

5 THE WITNESS: (cont'd.) "Dow Chemical Company, and which is common to all diaphragm cell chloralkali producers, is in the fabrication of diaphragms for the electrolytic cells. Because of its physical and chemical characteristics, the industry is totally dependent upon asbestos for the present and for the near foreseeable future".

10 These comments were also supported in statements, again which I will provide, from E.I. DuPont Company, and I think the importance of the DuPont statement is best pointed out by the fact that the only substitute that has been developed and promoted to date is a DuPont synthetic material called Matheon, and even in their comments to the Environmental Protection Agency in 1980, DuPont points out that asbestos is not replaceable.

15 DuPont also goes into other areas and I'm not aware of any of these manufacturing processes existing in Ontario, but similarly in the sulphuric acid industry there are no available substitutes for impregnated asbestos gaskets.

20 Asbestos has been widely used in gasketing materials and because of its low cost, what has happened is that asbestos-containing gasketing materials have found a very broad use and have cut into both the low cost and the...or the low performance and high performance ends of the markets which have used gasketing materials. There are plenty of other materials that have been around for years - cork, cellulose gaskets made with rag fibers, some other high-temperature gaskets using refractory fibers and ceramic fibers.

25 What has evolved over the years is the use of asbestos because it covers such a broad range of temperature performance and resistance to corrosive materials.

30 Another interesting comment if you look through these responses to EPA, from the National Electrical Manufacturers

THE WITNESS: (cont'd.) Association...and I'll be honest with you, until I was preparing for this hearing I had never read this statement, but I found it interesting enough to bring it along:

"Finally, it is ironic that the Environmental Protection Agency ban on the use of polychlorinated biphenyls (PCB) in new transformers has increased, where safety from fire is important, the use of transformers containing no dielectric cooling fluid but which depend instead on the heat-resistant properties of asbestos insulation."

That particular product is asbestos electrical paper, usually with some type of acrylic binder, manufactured in very thin paper material.

Let's back up for a minute here.

One other important point that I would like to mention as far as the earlier slides that I showed on usage, one category that is lacking if you compare those slides to the slides that would have been shown in the fifties and sixties, is the insulation category. This is probably the area that the industry has moved in most quickly and for justifiable reasons. This is the area where asbestos was used in the form of friable form, and I don't know whether that term has been used before the Commission, but in the form where it could easily be released from the product.

The products that I showed you earlier, if you look at them, each have a binder that tends to hold the fiber in, lock it in in some way. In the insulation area, because of the temperature problem and the lack of binders that met the temperature needs of the product, it was almost, maybe a mechanical bond at best, and products such as the calcium silicate insulations, drywall joint cements, shipboard insulation, these no longer exist in the marketplace. The industry, starting in the mid to

THE WITNESS: (cont'd.) late nineteen-sixties started to formulate the asbestos out of these products.

5 I think it can be said...I know of, I think it's two uses, and these are industrial uses where friable products still exist and this would be in the molten metal industry where the workers have been advised of the problem and I think are protected by work practices and protective clothing where needed, and some very other minor special applications. These are the
10 only places where a friable product still exists.

I would like to move now to some of the things that have occurred in the industry over the years to eliminate potential exposures.

The slide shows the various types of packaging that have been used. All the way on the right is the multiwall paper
15 bag, usually three or five plies, which was the standard of the asbestos industry starting somewhere in the nineteen-fifties.

The other two products or packages are the plastic bag, and that is a woven polyethylene with a polyfilm on top of it. The product all the way on the right is a pulpable paper bag,
20 a multiply paper bag, that will dissolve in water and is used basically in the paper industry.

Prior to the development of these packages, and in fact the pressure-packed form that you see there, the industry used jute bags as its basic way of shipping the product, and the
25 jute bag was a source of asbestos exposure for the people who handled it.

One of the more recent developments is taking that pressure-packed form on the right and compacting it even further, so that should the cover be damaged in some way that the fiber is so tightly packed that it will not release airborne asbestos.
30 That's what is called a high-density block. It has roughly twice the density of the other form of asbestos.

DR. DUPRE: May I, just again, ask when, roughly, the time period when the jute bags were replaced?

5 THE WITNESS: The jute bags were replaced starting somewhere, I would say, 1954, 1955, and ultimately phased out in 1960 sometime.

DR. DUPRE: And this was, of course, to, at that time, have a container to reduce fiber exposure?

THE WITNESS: Yes.

10 It created less dust in the air, I think probably is the easiest way to look at it. Also, to improve shipping methods so that in this case you have a block here, the material could be stacked neatly rather than being handled in bag-by-bag form. I'll get into that in a minute.

15 One other approach over the years that many people have suggested is the bulk handling of asbestos, so that no one has to open bags.

This particular railcar is the effort of probably five years of work, and there are six of those rail cars now being used for something other than asbestos fiber.

20 After somewhere spending over, somewhere over two million dollars to develop this particular means of shipping, it was deemed unacceptable by both the users and the producers of asbestos...the problem being that to keep the fiber, to carry the fiber pneumatically and to handle it presented some problems that the industry finally could not solve.

25 So that we continue to ship in plastic bags. These bags are palletized and either shrink-wrapped or stretch-wrapped in plastic to prevent damage in transit. Rather than handle in on a bag-by-bag basis, the shipments of fiber are handled mechanically, loaded into the railcar mechanically, unloaded mechanically at the handling site, stored in this form, 30 and are opened only when they have to be introduced into the process.

5 THE WITNESS: (cont'd.) This is a picture of the type of railcar that is used by the industry, what they call a DFB car. It has moveable bulkheads and the fiber load is then put in the end of the railcar and the bulkhead is put in place to keep it from shifting - again to avoid damage in transit.

10 I can't say all asbestos is shipped today like this. The problem has been just getting these railcars, and I know this Commission isn't interested in hearing the problems of the railroad industry, but they have been reluctant to spend money to introduce these cars into their fleets.

15 When the fiber is received at the using facility, it is stored and then eventually taken to some station to be introduced into the process. In the case of the paper industry, bag and all, many times, is thrown right into a piece of equipment called a hydropulper, so that the bag is not opened.

Unfortunately, there are a number of industries that cannot handle asbestos in this manner, so the bags have to be opened. This is one example of a bag-opening station.

20 Here the bag, the plastic bag, is stripped away. There is a vacuum at the face of that opening station and the fiber is pushed down and goes into some type of mixing operation. The bag is then disposed of, off to the side in a plastic bag.

25 There have been a number of efforts made over the past ten years or fifteen years to develop a mechanical bag opening equipment. Again, people will tell you that there are mechanical bag openers available. All I can tell you is that we have evaluated seven different bag openers. This one is now in use in a number of facilities in North America, but the problems were many in developing bag openers and each time these problems had to be resolved - breakdown. So, even though the bag is opened internally, you are going to be sending a man inside that
30 equipment or taking that equipment apart for maintenance, and

THE WITNESS: (cont'd.) that's one thing you try to avoid if you possibly can.

5 This is another type of bag opener that has been evaluated over the years. Actually, in a commercial application this one was just not deemed acceptable. To my knowledge there are only two types of bag openers that are now being used in the marketplace out of the seven or eight that have been introduced.

10 DR. UFFEN: Why weren't they acceptable? I missed that.

THE WITNESS: The major problem is...the major two problems are breakdowns, as I say, and if you have to keep on opening that bag opener up or having somebody crawl in or take the sides off, you are creating a...the fiber dust is collected inside there and you are creating a maintenance problem.

15 The second problem is finding a bag opener that will keep the bag from going into the mixing operation.

I guess it's going to be one of the problems that industry eventually faces with robots, too. When they make a mistake, they are not there to do anything to cover it up or to resolve it.

20 The other major area of asbestos exposure that the industry has spent, made a concerted effort to try to eliminate, is fabrication of products. The asbestos-cement industry, asbestos-cement pipe industry, has had tools such as this particular cutter available for a number of years. But unfortunately, in the field the workmen found it a lot easier to use an abrasive-disc saw with a gasoline-type motor.

25 The industry has made a concerted effort to develop work practices and to discourage the use of these saws and to promote the use of these types of pieces of equipment, and I will mention work practices a little bit further, later on, but I want you to see the types of equipment that are being used.

30 DR. DUPRE: Mr. Reis, I understand that the

5 DR. DUPRE: (cont'd.) cutting tool that is pictured on the slide there is very frequently, perhaps even almost normally, used in cutting of copper pipe.

THE WITNESS: A version of it, right.

10 DR. DUPRE: Its use has been disseminated in the cutting of copper pipe. Could you enlighten me on why its use appears not to have been very widely disseminated with asbestos-cement pipe cutting?

THE WITNESS: It has been, but workmen are always looking for an easier way to do the job. I'm not sure copper pipe is a proper analogy because in my little bit of experience with copper pipe, in joining copper pipe the ends are more sensitive to proper cutting and this is not quite the case with asbestos-cement.

15 But these tools have been available, but there have been easier ways...which unfortunately generate more dust... that have also been available and the worker in the field chose to take the easier way.

20 DR. DUPRE: But to some extent, of course, if workers in the field have had that option, that would, I suppose, be a comment on the scope and effectiveness of a procedures kind of regulation, of a regulation by procedures?

THE WITNESS: Exactly. I don't think it's the fault of the workman. I think the workman is looking to do his job in the best possible way, but the fastest possible way as well.

25 DR. DUPRE: The regulation by procedure enables him to do that.

30 THE WITNESS: Right. If it disallows him to use one tool which is easy, but it's not providing the safety and protection that he should have, then that particular tool should be banned from the workplace, and we are getting close to the end of my presentation already if we slip into that.

THE WITNESS: (cont'd.) Another type of tool that has been around for years...and I'm not that close to the asbestos-cement pipe business, but I can assure you that I have been told that all of these tools are out on the job, including the abrasive-disc saw, and all these tools sit in the back of the pickup truck and the abrasive-disc saw is used. It has taken a concerted effort to educate the contractor and the worker as well, and that effort has been put forth by the asbestos-cement pipe industry both in the United States and Canada.

DR. UFFEN: Does the abrasive-disc saw have carborundum or something that would be abrasive? Or a diamond disc?

THE WITNESS: I think the carborundum disc is probably the most widely used because of cost, but if somebody has complete control over the tool, you may very well see a diamond blade on it as well.

I think most of you have seen this as far as the Association's submission to the Commission. This is an example of the work practice brochure that has been developed, and somewhere around thirty thousand of these have now been distributed in North America.

The interesting thing, and probably making it even more effective, is that the same type of work practice brochure was adopted by the American Waterworks Association, and they as well have distributed this brochure to workers in the field.

Another example, and this one is probably, is a little bit different, is the cutting of asbestos-cement sheet. This is an example of the saw cutting asbestos-cement sheet without dust control.

One of the points I would like to make here is that it seems like there is an easy solution to this - go to the saw manufacturers and tell them that you need a new saw. Their answer was, there is not enough market for us to develop a product. If you have something, we would look at manufacturing it. But

THE WITNESS: (cont'd.) unless the market is big enough, we are really not interested.

5 So a saw was developed and the answer was, the market was not big enough so the major saw manufacturers would not produce the product. So the industry found a small manufacturer... in fact two small manufacturers...who now buy saws and adapt them for dust control. This is an example of the type of saw. Here is that saw cutting the same board, the same type of board that you saw in the dust box earlier.

10 I know of at least two manufacturers, and I would venture to say all of them now have these saws available through their field engineering groups and that if a person buys the products and is installing them but cannot justify buying the tools themselves, these tools are available on loan for jobs.

15 Again, a segment of the industry has developed work practices for asbestos-cement sheet. These booklets are being distributed with the tools to the workers in the field.

The other part of cutting asbestos-cement sheet is areas where you don't need...you are only making small cuts.

20 Again, here is an example of a tool that has been available just as the die cutters were for years, but really was not widely used. The industry has put together in these work practice brochures recommendations of tools that are available and when and how they should be used.

25 Here are the types of tools that are now used in the asbestos-cement industry and being actively promoted by the asbestos industry.

30 One other area of concern - the friction materials industry. It has always been said that when you take a brake lining off, a common practice has been to blow out the dust before cleaning out the brake assembly area.

The friction materials industry has labelled its

5 THE WITNESS: (cont'd.) products and all friction material manufacturers now enclose a label and instructions in their boxes. The Friction Materials Standards Institute has developed a work practice booklet recommending the use of either vacuum cleaning equipment or there is another piece of equipment in the marketplace which is a wet washing tool. It has a little basin that sits underneath the brake and has a stiff brush, a pencil-type brush with a hollow core that you use amended water in and wash out the brake assembly. Both of these are being widely promoted by the automotive industry.

10 These are examples of the work practice brochures that I mentioned to you. This actually is an old slide from... these first set of brochures were developed in the early nineteen-seventies and distributed, and now there is a second set of brochures that are easier to read, more descriptive and graphic as far as trying to get the point across of what a worker should and should not do.

15 DR. DUPRE: These brochures are all prepared and printed by the A.I.A.?

20 THE WITNESS: These are either prepared or stocked by A.I.A., or industry trade associations under the promotion of A.I.A. have developed these. For instance, the flooring brochure has been developed by an organization called the Resilient Flooring Institute and their membership has active participants who are more familiar with work processes and they felt that would be the better source of information and developing these programs.

25 DR. DUPRE: Do you have any sense for the print run of these different brochures, how large it would be, how many thousands or tens of thousands or hundred of thousands, say, would be printed in a given year?

30 THE WITNESS: I can get an answer to that question and we will get an answer back to you. I personally do not know.

5 DR. DUPRE: Getting away from the quantitative aspect, if you will permit me to pursue this brochure situation, would you have a sense for the extent to which...well, I'll put it to you this way. What is the process whereby these brochures wind up getting into the hands of workers? Would it be one or all of the combination of the following: through management of a firm by which the worker is employed, or again through an accident-prevention association such as the one that exists here pursuant to workers' compensation legislation, or again, through the unions to which a worker might be attached, or all three?

10 THE WITNESS: The major source of distribution has been through the management of firms using asbestos-cement products. The industry works with those people to educate them. We have not had any...we have not seen any effort on the part of the unions to distribute these brochures, and I think that's a point that probably we should be looking at further. They are aware that they exist. To my knowledge we have not had any requests for volumes of this.

15 We have dealt with the major...in the United States, at least...we have dealt with the major, the Defence Department and the major military services, and recently we sent out six thousand copies of available literature for the use of various defence establishments in the United States and overseas for the U.S. services.

20 We have, I would say that the path that these brochures follow, they are given to an industry and then distributed further within that industry either by health and safety personnel, inspectors, or distributed directly by management within the company.

25 The other area we have tried to pursue but have yet to be successful in, is trying to distribute them through the occupational safety and health agencies.

DR. DUPRE: The one base that you haven't touched in my question are the accident-prevention associations, and particularly with respect to the construction industry. I would have expected that perhaps a construction accident prevention association would have been, given the size and mix of firms that are involved, the nature of the lay reports and so on, would have been the principal source whereby brochures could get into the hands of...

THE WITNESS: Yes. We have advertised them as being available and we have put on presentations at State safety association meetings. I cannot answer the question, but my feeling is that we have not gotten the distribution that we would hope to get through that channel.

DR. DUPRE: I see. Well, then perhaps accident prevention associations in construction have not taken advantage of the availability?

THE WITNESS: They have been advised that they exist. I guess I'm trying to answer your question - we have not force fed them with the brochures, but they are aware that they exist and they have not really probably taken advantage of them to that extent. That's my feeling.

This is just an example of some of the other brochures that are available. These are mainly used in the manufacturing facilities.

I see I've lost my expert on the projector. I have one more transparency there.

This may help answer your question a little bit, Dr. Dupre.

One other area that we feel we can accomplish more than has been accomplished to date is in the labelling area. The Asbestos Information Association of North America has an active dialogue with the Environmental Protection Agency in the United States in developing educational labelling for asbestos-containing

5 THE WITNESS: (cont'd.) products. It's a program that we have been working on for a long time. The problem and the delays that we have encountered, though, are working labelling into the overall regulating process in the United States.

This is an example of the type of label we would talk about, though, for...this happens to be for friction products.

10 Besides warning the worker that a problem exists, we feel we should go further and tell them how to avoid that problem. It doesn't help them to tell them that's a problem. It just stops them from doing something that's wrong, but it doesn't resolve his problem of 'how am I going to complete my job, I've been given this task'. This would be the type of labelling that we would propose, that went on to talk about work practices - do not do something until you either read a work practices booklet, or
15 in the case of friction materials, there are three particular points that we want to make - not to use an airhose or a dry brush for cleaning out and create dust, tell them then to use a vacuum or a wet cleaning method; do not machine that line without using a piece of equipment that has dust collection on it.

20 We feel this type of label on any product that in some way may create significant amounts of asbestos dust would go a long way to eliminating these few areas that the industry doesn't have direct control as far as potential exposures.

25 By the same token, it might provide also a means of alerting additional people to the fact that work practice brochures do exist and that work practices are needed for the product.

I think...you can turn that off now...

30 DR. UFFEN: Just before that, that little 'a', is that any kind of international symbol recognized internationally, or is that just one that is used?

THE WITNESS: The 'a' was developed in the United

5 THE WITNESS: (cont'd.) Kingdom, and is rapidly becoming accepted in Western Europe as a symbol of an asbestos-containing product, and is being adopted by an organization called the Asbestos International Association, which is made up of most of...the membership is made up of the national asbestos associations around the world. The 'a' would be the identification label for asbestos.

10 The recommendations, I guess, the Association would like to leave with this Commission are basically three. Most of the slides that you saw here and most of the areas where we are aware of potential exposures that may not be fully controlled yet are in the construction industry. We would urge that the Commission in its findings come up with some guidelines as far as construction industry standards - guidelines that can be enforced and can be usefully adopted.

15 Right now in the United States, we face a problem in that the OSHA standard covers both the manufacturing and the construction industry, but the data hasn't been realistically implemented in the construction industry and in fact if you look at some of the hearings held by the NIOSH/OSHA Construction Industry Advisory Group, as early as 1978 when we first submitted work practices to them, they have come to say that work practices are the way to resolve the problems in the construction industry, rather than the standards that now exist.

20 The second area that we think the Commission hopefully will address very quickly is...I guess it involves the construction industry, but a different segment of it. That's the people who are handling demolition and removal of asbestos-containing products. I did not address that issue in slides. That's an area where potential exposures exist and whether the removal be justified or not and some of the actions that are being taken today are justified or not, the fact is that there is

5 THE WITNESS: (cont'd.) tremendous pressure to remove asbestos from both public and private buildings, insulation materials especially. There are a lot of people who...and a lot of work going on where people are not being properly educated and informed as to what should take place. We would urge the Commission to make some very strong recommendations in this area so that if these materials are going to be removed the workers who are handling them are properly protected.

10 The third area that we would like to recommend the Commission take some action in is the labelling area. This is an example of the type of labelling we feel would be beneficial to everyone involved, as long as there are asbestos products in the marketplace, and we feel that will be the case for many years to come.

15 We think something can be accomplished here though. The label should provide a warning, but also should go beyond that and help educate people who are handling those products so that they have a full understanding of how they can create potentially hazardous exposures, but also how they can avoid them.

20 That's all I have to say on a formal basis. I would be glad to...

DR. DUPRE: Thank you very much, Mr. Reis.

Mr. Hardy, do you wish to pose any questions here at this time?

MR. HARDY: Not at this time, Mr. Chairman.

25 DR. DUPRE: Mr. Laskin, would you like to lead off?

MR. LASKIN: I just have a few questions.

CROSS-EXAMINATION BY MR. LASKIN

30 Q. Can I go back, Mr. Reis, to I think your first few slides which set out the various uses, the present uses of asbestos, and just ask you a few questions from the

5 Q. (cont'd.) viewpoint of fiber type. Can I ask you this? In 1982, given what you have indicated are the present uses of asbestos, are there any of those uses that require one fiber type as opposed to any other type?

10 A. The one area that there is a problem in is the asbestos-cement pipe area. There is asbestos-cement pipe that is made without crocidolite fiber, it is my understanding it can be done. There is a real question of whether producing pipe in that fashion can be profitable to a manufacturer.

15 In other words, there is significant processing problems...at least it has been the experience that I am familiar with...significant processing problems, a higher increase in rejects, potential problems with producing nonuseable pipe, this type of thing. In other words, dramatic effect beyond the cost of the raw materials going into the pipe that have never been resolved totally as far as the asbestos-cement pipe industry is concerned.

20 Q. Just to pursue that, when you say crocidolite, just so that I am clear, do you mean exactly that, or is amosite a substitute for crocidolite?

A. Amosite is not a hundred percent substitute for crocidolite.

25 Q. So that is what you are telling us...leaving aside for a moment asbestos-cement pipe...any of the fiber types are generally interchangeable in terms of all the other present uses of asbestos?

A. Oh, no. No, I guess I should make that point clear. It's all chrysotile fiber and none of the other fiber types are used in any of those other applications.

Q. But could they be?

30 A. Yes. There were gasketting materials made over the year with crocidolite, and there are reasons to use crocidolite for that application. Chrysotile has been the most

5 A. (cont'd.) widely used because it is the most readily available, and on a cost basis it has performed satisfactorily or more than satisfactorily. There is no reason to go to the other materials.

10 Q. Let's come back to cement pipe for a moment. Can you give me any idea as to what percentage of cement pipe is being presently manufactured using only chrysotile, as opposed to some input of crocidolite?

15 A. In what market area are you talking about? On a worldwide basis?

Q. Let's talk about North America...or talk about Canada, if you can.

15 A. Yeah. Well, there's only one pipe producer active in Canada now, and they do not use crocidolite.

Q. Who is that?

A. Who is it?

Q. Who is it and where are they producing?

A. It's Atlas Turner in Montreal.

Q. And they use only chrysotile?

20 A. That I can't answer. I understood they were using some amosite, but they were working away from it.

The U.S. pipe producers only use crocidolite.

Q. Can you give me some idea of how much, relative to chrysotile?

25 A. Probably no more than maybe two or three...of the fifteen percent...I was going to say you understand, and I continually say it and people don't understand...but of the fifteen percent asbestos in the asbestos-cement pipe, two or three of that fifteen might be crocidolite.

30 DR. DUPRE: Does that mean that we are talking about roughly a five-to-one ratio?

THE WITNESS: Somewhere around there.

THE WITNESS: (cont'd.) Four-to-one, five-to-one.

DR. DUPRE: Five of chrysotile to say, one crocidolite?

THE WITNESS: Yes.

DR. DUPRE: Or perhaps, in the rare case, amosite?

THE WITNESS: Right.

DR. DUPRE: Has that ratio been constant, more or less, over the years, would you say?

THE WITNESS: No, because the percentage of asbestos in asbestos-cement pipe has decreased over the years.

DR. DUPRE: Has that altered the ratio of one fiber to another?

THE WITNESS: Yes. I think it has involved the use of more crocidolite, in my experience.

DR. DUPRE: It has involved the use of...

THE WITNESS: The crocidolite has stayed the same, but the amount of chrysotile in the pipe has gone down, in the instances that I am familiar with.

DR. DUPRE: Does this mean that with relative confidence, if one were looking at historical exposure levels in A-C pipe plants such as the one that we had here in Toronto, that we could as a rule of thumb and in the absence of hard data, or perhaps as a check on such data as might be forthcoming, depict a roughly five-to-one chrysotile-to-crocidolite ratio in the nineteen-fifties and sixties in A-C pipe on an international basis as common?

THE WITNESS: Yes, it probably is. If you are looking for a rule of thumb relationship, I would say that would be a fair assumption.

DR. DUPRE: I'm sorry, counsel.

MR. LASKIN: No, that's fine, Mr. Chairman. That covered a question I was going to ask.

MR. LASKIN: Q. In respect of the plant in

5 Q. (cont'd.) Montreal that is now not using crocidolite and only using chrysotile with a little amosite, can you tell us whether it is considered that amosite is thought to be able to do the job that otherwise crocidolite was doing?

THE WITNESS: A. I really can't speak for those people. I'm not that close to it.

10 There have been problems of availability of fiber, going back to the nineteen-seventies when there was a strike in Quebec and we had some problems in the Johns-Manville mine there, and because of availability problems there was a lot of juggling around of formulations and experimenting with different types of fiber.

15 When everything was over, everybody went back to their old formulas as being the most efficient and best way of producing pipe in the volumes that were needed, and during that period of time a lot of amosite came into the marketplace. So I have to assume that amosite is not as effective or efficient as a replacement for crocidolite, on that basis.

Q. What is it that crocidolite does?

20 A. Provides drainage, provides green strength for a piece of asbestos-cement pipe. When you take the mandrel out of the pipe and stack the pipe for curing, you have a problem with the ovality...the roundness is I guess what you are actually trying to maintain at the end of pipe...you tend to get an ovality and then you can't join one piece of pipe to another because the end
25 of the pipe wouldn't fit into the fitting.

Production rates are a big problem, drainage. Crocidolite has better drainage characteristics than chrysotile.

30 So it goes right through the entire production of the pipe from the formation of it to the curing of it, and it actually can improve strength in certain ways in the finished product.

5 Q. The chairman, when you were having your opening dialogue, asked you about the question of competition in flooring products. I wonder if I could ask you a similar question in respect of the other major uses of asbestos.

I want to take friction materials. Has there been any competition from other products, not containing asbestos, in the friction materials industry?

10 A. Yes, there definitely has.

I think you have got to take a good look at the friction materials industry, and there is a certain segment of it that is misunderstood as well. There are and have been since... there have been nonasbestos friction materials in the marketplace for years. Racing cars for years used a metallic-based material. People always said to me, boy, what would the aircraft industry do without asbestos? The aircraft industry hasn't used asbestos in airplane brake linings for...maybe in some of the small planes... but in all the large jets you are going to fly in today they are all what they call a cerometallic. It's a blend of metal and ceramic fibers.

20 So these products have been in the marketplace. They are extremely and they are designed for a specific use. In the case of aircraft, that whole brake assembly is taken apart on a regular basis and maintained, because of wear problems.

25 But there are products out there and there are new products being developed. Today, a good many of your automobiles have nonasbestos disc pads in the front linings.

30 There are two reasons for that. Yes, there was concern in the friction materials industry as far as health and they were looking for substitutes, and I think that, in my own mind I am convinced that that was one of the reasons that they moved away.

Probably what turned out to be the more compelling

5 A. (cont'd.) reason and the program that accelerated it was the downsizing of the automobile. For years everyone drove around in these big cars and they had big brake linings and plenty of surface area, and the operating temperature of the brake lining was eight hundred degrees, nine hundred degrees Fahrenheit maybe, at high stopping temperatures.

10 All of a sudden they downsized the automobile and to cut weight not only do they sell you half a car, but they also try to cut weight wherever they can, and they just redesigned the entire braking system so now you have...in a disc brake you have a smaller rotor, you have a smaller pad grasping that rotor, and the operating temperatures of those brake systems today...as I understand it, and I'm not an expert in that area, I just listen to talks being given...go above a thousand degrees.

15 Now you are starting to push, maybe up to eleven hundred degrees, and you are starting to push the stability of the phenolic/asbestos blend that made up the brake pad. So they have gone to metallic fibers and it's what they call a semi-metallic material that's a blend of a phenolic resin and a metal fiber.

20 So this was the other part of the reasoning for removing asbestos from disc pads. They have not been as successful in removing asbestos from drum brakes. The big problem is, as I understand it, processability.

25 They can make a material that will stop the car, obviously the same formulation could be used in the rear as in the front, but it can't be processed, it can't be molded, it doesn't make a material that is flexible enough to take the pressure when that brake lining expands against the drum.

30 Q. What about gaskets, because I noticed when you put your table up on the board that it seemed to be a reasonably significant industry in the United States and there was none in Canada.

A. Yes.

Q. Have the Canadians done something that the Americans haven't?

5 A. No, I think it's a specialized enough field that no one has ever really gotten into the manufacture in a large way, the manufacture of gaskets, up here. I believe there are some people manufacturing gaskets in Ontario and in Western Canada as well.

10 There are substitutes being looked at in that area, and again you've got some other materials, synthetic fibers. You usually don't have the same temperature resistance as asbestos, but they are being looked at.

15 You have the whole line of gaskets, and I guess I didn't make my point quite clear. Because of its low cost and tremendous versatility, what asbestos gaskets did is spread out of the range that they are really needed in for operating performance - which is a fairly broad range - but they actually started to eat into the low temperature ranges where really asbestos wasn't needed, where organic gaskets might work just as well. But there was very little cost difference and the basic gasketting stock that people used, they just kept...in the storeroom they kept one material.

20 So in some of those areas there has been some reduction in the asbestos usage, but in the major areas in the gasketting field, the major areas that asbestos gasketting performs best in, no substitutes have been found.

25 DR. DUPRE: If there has been this reduction in the use of asbestos gaskets for low temperature purposes, does this again represent a choice which is noncost related and, as I believe you have just pointed out, there has been a rough similarity in the cost of gaskets made with asbestos and organic materials?

30 THE WITNESS: Yes.

DR. DUPRE: Would the client preference, from your

5 DR. DUPRE: (cont'd.) knowledge, be triggered by regulations that exist in certain jurisdictions, restricting the use of asbestos gaskets, or would it instead simply be triggered by more general apprehensions of asbestos as a substance?

THE WITNESS: I guess we have to define the term client a little bit better. The gasketing industry involves the primary manufacture of gasket stock, which then goes to a cutter who is going to die cut it for specific uses.

10 The data that I have seen show that that die cutter has, the exposures in that die cutting process are extremely low.

There is concern, however, on the part of that man that he would have to meet some kind of regulations or that his shop may be burdened by additional regulations in the future, that he wants to know that he has an alternative.

15 Beyond that there are really no concerns because once the gasket is cut there is no dust created in the handling and installation.

MR. LASKIN: Q. Can I ask you just one or two more questions about fiber type, Mr. Reis?

20 Is, to your knowledge, amosite being used at all in North America, apart from the one operation in Montreal that you spoke of?

THE WITNESS: A. Yes. It's used in the... insulation materials are used in the molten metal and blast industries.

25 Q. Those very specialized uses?

A. Right.

Q. In those very specialized uses is it essential, or could chrysotile do just as well?

A. It is essential. It has never been replaced.

30 Q. Apart from the use of crocidolite in asbestos-cement pipe, is that fiber type being used in any other present

Q. (cont'd.) uses of asbestos?

5 A. Not that I am aware of, in any major quantity. I cannot...I am not aware of...there is an agent distributing it and he may sell five tons or two tons to somebody else. I have never been able to identify it. You have no way of identifying whether it is sold or not.

10 DR. DUPRE: Would this be recent, or is this a long-established pattern that the use of crocidolite is so restricted? Specifically, the thought that motivates the question, Mr. Reis, is with respect to the possibility of worker exposure to crocidolite or amosite asbestos in building demolition, for example, where they are going back to a long, historical process?

15 THE WITNESS: There were some sprayed insulations, as I understand it, developed in the United Kingdom that contained blue fiber, and I just don't know the extent of distribution of those products. There was some special filter papers, there was some specialty type papers made with blue asbestos over the years that have not been made in ten or fifteen years, to my knowledge.

20 I guess the problem is that we take a look at an asbestos-cement pipe industry that uses a hundred and fifty thousand or two hundred thousand tons of asbestos and let's say ten percent, fifteen percent of that, twenty percent of it maybe to use the five-to-one ratio, twenty percent of that is blue. All these other uses combined are never going to show up to anybody who is interested in trying to market the material. They are not
25 going to get very enthusiastic about the markets and promoting the material, so it has just never been identified, to my knowledge.

MR. LASKIN: Q. So just to sum up on all of that, we have crocidolite used in asbestos-cement pipe, we have amosite used in specialized insulation products?

30 THE WITNESS: A. Well, in the old days it was used in the basic pipe insulation.

Q. But presently, and for everything else we have chrysotile only?

A. Right.

Q. That's a fair summary, is it?

A. I think that's a very fair summary.

Q. Just turning to a different topic, are you, in your capacity as president of the A.I.A. or in your capacity as a director of asbestos policies for Johns-Manville, are you knowledgeable to be able to discuss with us what industry's present control technologies are and its ability to meet existing regulatory standards? Is that something in your competence, or...?

A. I am not an engineer and I'm not an industrial hygienist. My experience has given me a degree of understanding in that area. I guess it would depend on the question. I can answer what I know exists. I cannot tell you beyond that whether I feel something is economically achievable or not.

Q. Can you give us an overview as to what exists in respect of industry's ability, with present technology, to meet regulatory standards?

A. I don't think there is any doubt...and again I would guess that Dr. Bragg's work will probably address this as well....I don't think there is any doubt in the asbestos industry's mind that certainly it can meet a two fiber standard and in virtually every case except some isolated instances that I can't even think of right now, can meet a one fiber standard.

Below that, I will not get into the question of monitoring, other than that the Association put on a presentation here about the whole monitoring process and how you enforce a standard below a fiber, and that would be, I think, the single greatest problem faced by industry. You are now talking about a monitoring and enforcement measuring method that is going to present some problems when you take it out onto a plant floor and

A. (cont'd.) try to ascertain whether you can operate without having to worry about meeting a standard.

5 I guess the big problem there is that, again, you have to go back and look at the products as well. The big problem areas are the handling of the raw fiber and the industry, as I have tried to indicate earlier, has come a long way. The introduction of the fiber then is usually handled in some type of an enclosed process or is bound in by the binder that is being
10 mixed with it, and then possibly a problem at the finishing end of the process where some type of finishing work has to be done.

There has been a considerable amount of work done in that area as well.

Q. There is another topic in which the Commission has some interest, and that is the extent to which various no-smoking
15 programs have or have not been successful in various asbestos-producing and manufacturing operations. Are you able to give us any overview of that issue?

A. I am aware of four members of the Association who have no-smoking programs in effect in their plants, and then the one that I am most closely associated with, my company, which is one of the four, has it in effect in various degrees
20 depending on understandings, union contracts and this type of thing.

Q. When you say a no-smoking program, can you be more specific as to what you mean? Do you mean a program which says a particular worker cannot smoke while he or she is on the
25 job in a particular area, or do you mean the company will not hire for a particular area a person who smokes?

A. We have both. We have workers who have been with us and we did not feel it was possible to tell them that they could no longer work at Johns-Manville because they smoke. We have no smoking on the facilities. We do not hire smokers for
30 work in areas where asbestos is being used.

5 A. (cont'd.) In one of the brochures, you saw it there, before you begin is a notification to a new worker coming with the company that working with asbestos and smoking has been shown to have a significant effect on the increase of lung cancer, and that we are advising him of this ahead of time and that we are only hiring nonsmokers in these areas.

10 DR. DUPRE: Why do you say, only hiring nonsmokers in these areas? Can you define that a little bit for me? Does a policy of hiring nonsmokers apply as a policy that will cover an entire plant where asbestos is being used, or is instead a policy where you would only hire nonsmokers, for example, to do maintenance work?

15 THE WITNESS: Most of our asbestos-using facilities are just asbestos-using facilities, so a worker who is hired in that plant would have to be a nonsmoker. That would include the maintenance workers.

20 There are instances where there are adjacent facilities. We do have plastic-pipe plants that are on the same facility, but separate from the asbestos-cement operations, and the workers who work in that plastic-pipe facility can conceivably be a smoker.

25 DR. DUPRE: Well, can I ask you to enlighten me a bit on the following? I would imagine that the workability, or for that matter the feasibility, of a policy of hiring only nonsmokers will probably vary considerably from jurisdiction to jurisdiction - from state jurisdiction to state jurisdiction, from provincial jurisdiction to provincial jurisdiction, possibly.

30 THE WITNESS: Yes. We have to comply with other laws, yes. I am not aware of any law that would stop you from...our problem has been in working it into our agreements with the labour unions at that particular facility, and we have had unions who adopted the program wholeheartedly and supported the company, and

THE WITNESS: (cont'd.) other unions who have felt, for whatever reason, that it was a negotiable item and should be in the union contract, and we have had it treated in that case.

5 DR. DUPRE: Now, would awards in grievance arbitrations provide us with a guide of the extent to which different jurisdictions have been able to permit nonsmoker plants?

10 THE WITNESS: I think...as far as I know, Johns-Manville is the only company that has been challenged. Union Carbide has not, out in California, Superdor, who are a asbestos-cement manufacturer in Pennsylvania, have not been challenged. Johns-Manville has been challenged in two jurisdictions - in Texas and Massachusetts. In Massachusetts the courts have upheld our position, and in Texas we have had to set aside a smoking area within the facility, based on the court ruling.

15 DR. DUPRE: In both instances what was at stake was a policy of hiring nonsmokers, as distinct from a policy of no smoking on the job?

THE WITNESS: No. No, these were no smoking on the job, not the policy of hiring nonsmokers.

20 DR. DUPRE: Oh. Now, in the domain of a policy of hiring only nonsmokers...

THE WITNESS: I am not aware of any challenges. I am not familiar with any.

DR. DUPRE: Would there be...

THE WITNESS: We can check.

25 DR. DUPRE: This is a policy that would not be uniform among Johns-Manville plants? It would vary with local decision making, is that correct?

THE WITNESS: We would have...yes. If there were some state law that we were violating by having that policy, then we would have to adapt. But I am not aware of any.

30 DR. DUPRE: Does that mean, then, that in the absence

DR. DUPRE: (cont'd.) of a law to the contrary there is a company-wide policy to hire only nonsmokers?

THE WITNESS: Yes, in asbestos-using facilities.

DR. DUPRE: In asbestos-using facilities.

How long has this been in effect?

THE WITNESS: I may guess - 1977.

DR. DUPRE: Now, of course, this policy has affected only new hirings?

THE WITNESS: Yes.

DR. DUPRE: So that with respect to the remainder of the labour force, the pre-1977 labour force, presumably a no-smoking-in-the-job policy simply applies there?

THE WITNESS: Yes, right.

DR. DUPRE: And your anti-smoking programs, I presume, have, of course, targetted that part of your workforce population, the pre-1977 employees?

THE WITNESS: That's right. Yes.

MR. LASKIN: That's fine then. Those are my questions.

Thank you, Mr. Reis.

DR. DUPRE: Is this an appropriate point to take a ten minute break and resume at four, when perhaps counsel can have a batting order?

THE INQUIRY RECESSED

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THE INQUIRY RESUMED

DR. DUPRE: Just before we go to the batting order, if the batting order will excuse me, I would just like to pose another question on the brochure, to cover another area that I omitted when I asked questions on the program.

These brochures are available for distribution

DR. DUPRE: (cont'd.) on a worldwide basis, are they?

5 THE WITNESS: There is another set being developed by the Asbestos International Association which kind of blends together... we are trying to come up with a single brochure eventually, but it blends together the brochures that have been developed by the various national associations.

10 DR. DUPRE: Well, now, does this mean that the brochures being developed by the International Association are likely to become available in a number of languages?

THE WITNESS: Yes.

15 DR. DUPRE: So that it will be, at that point, possible off the shelf to have brochures in, say, Italian, Spanish, Portugese, French and so on?

THE WITNESS: Right.

20 There is...the brochures that I have submitted, for instance, talk about tools and sources of tools, and the diagrams in there tend to be designed around, drawn around tools that are available in this country. Whereas in Germany there's a different set of tools developed by a German manufacturer. The international brochure covers all of these. In other words, it is blended together to be suitable for any of fifty or a hundred countries.

DR. DUPRE: Thank you.

May I go to the leadoff batter, who is...?

25 MR. LEDERER: Me.

DR. DUPRE: Mr. Lederer?

MR. LEDERER: Yes. I didn't realize that baseball was a continuing theme here.

CROSS-EXAMINATION BY MR. LEDERER

30 Q. Mr. Reis, you may have been told, you may have

5 Q. (contd.) gathered from that comment about baseball, that unlike everybody here I am rather new to these proceedings, and whereas they may have learned a great deal, I know next to nothing.

So the questions that I'm about to ask you may seem a little naive, and if they do, I hope you accept my apologies, and Mr. Chairman, if I'm going over ground that is well-covered, I'm quite happy to simply withdraw the question.

10 I won't be very long.

Mr. Reis, the first area that I'm interested in is the series of examples you have given us of efforts that your Association members are making with respect to decreasing the relative exposure in the workplace. It seems to me...and I want you to tell me if I have misunderstood this in some way...it seems to me that the thrust of regulation - that is, fiber content in the air - runs towards what might be called...and again these are my words...a sort of universal approach. You want to be sure the air in each segment of the workplace is at a certain level, and that seems to imply a rather general approach...you put in a ventilation system to cover the entire area.

20 All the examples that you have given us seem to be more site-specific or attempts to take asbestos out right at the source. For example, you have the slide of the metal container attached to the saw.

25 Now, I'm curious to know whether or not I'm, with great insight off the top, picking up two philosophical approaches to this problem, or whether you are doing both, or why it is that all of your examples seem to relate to taking asbestos out at the source and none seem to relate to a more universal approach.

30 THE WITNESS: A. Ducting the exhaust systems, the things that I think you are talking about, are a part of the system like this, but our policy within the company is then to have a

5 A. (cont'd.) process that is going to release any airborne asbestos and capture it immediately. Once you have let it get away from the point that it is being generated at, you have created a problem that there really isn't any great solution to.

10 There have been studies out. One of consultants to the Environmental Protection Agency a couple of years ago recommended general ventilation, changing air in a building ten times an hour to solve the dust problems, and cut the ambient air count way down.

15 You've got all that air moving out, working against your source where you are trying to capture the dust, you are drawing...when you draw the air out of a building you are drawing it right past the man. If it's got any dust in it, you are guaranteeing that you are exposing him to at least a certain exposure.

Our whole goal has been to just capture it as soon as it is generated, and get it into an enclosed system and run that air, then, through a highly-efficient bag house filter.

20 Q. Do your members have in place general ventilation systems to assist in the program of reducing asbestos exposure?

25 A. Well, as I say, general ventilation to me means changing the entire air in a plant. I am talking about... they do have dust-control systems whereby once the dust is captured at the source it is then carried through an inplant ducting system and out to a bag house, or something to that effect.

Q. I'm not sure if that...I'm not sure whether you answered my question. I appreciate the fact that you think it's difficult. I'm asking whether or not those kinds of systems are in fact in place.

30 A. What do you mean by general ventilation?

Q. All right, let me....can I presume that has

Q. (cont'd.) been exhibited somewhere?

DR. DUPRE: I believe you are holding a copy of the Occupational Health and Safety Act of 1977, an Ontario statute, Mr. Reis? (sic)

MR. LEDERER: I am indeed, Mr. Chairman. From Mr. Laskin's office. I might say I stole it from there.

MR. LEDERER: Q. I want to read you section 131 of, I believe, a regulation which is attached to that Act. Okay? It says:

"An industrial establishment shall be adequately ventilated by either natural or mechanical means such that the atmosphere does not endanger the health and safety of workers".

Now, what I am interested in knowing is whether or not your members are prepared to see the legitimacy of that kind of approach in assisting in the reduction of asbestos exposure.

THE WITNESS: A. I think from that viewpoint...I don't think that statement...that is not the solution to the exposure to asbestos in a manufacturing plant, to have adequate general ventilation.

Q. Well, I'm not suggesting...

A. Which means...I don't know how far you want to carry it...but either some means of recirculating the air, the general air in the plant...we have nothing against that and that particular process is used, but that is not the solution to the asbestos dust problem.

As I say, once the fiber is in the air...

Q. What I'm asking...sorry...all I'm asking, and I think now the answer is yes, whether or not you perceive the utility of this kind of approach and the kind of systems that are represented by that section. I'm not suggesting they are the answer, but they may well be part of the answer.

5 A. Yes, if there is fiber in the air that has not been captured, then by changing the air as well through general ventilation, you are going to continue to lower the counts in a facility.

Q. So you apparently concede, then, the usefulness of that kind of approach on top of the kinds of examples that you have given us?

10 A. Given a finite amount of money to control dust in a plant, I can tell you where it should be spent first.

DR. MUSTARD: Can I ask a question on this?

MR. LEDERER: Please.

15 DR. MUSTARD: Have there been any major capital investments in the United States in the last five years in asbestos-manufacturing plants which have attacked this problem, and if so what have they done? New plants or major upgrading of old plants, how have they...what kind of air systems have they put in? Totally based around machines so the negative air system, taking air out that way, or have they gone to the other systems?

20 THE WITNESS: Both. Every single one of them has been focally based around...

DR. MUSTARD: Have there been any major developments, major plant investments on air systems in the last five or six years?

25 THE WITNESS: Yes, there have been new additions of equipment built in a number of facilities in the United States, extensive additions, and there have been a few smaller facilities that have been put in place - new, that were not existing before - and in every case the majority of the effort has been to control the fiber at the point source.

DR. MUSTARD: How effective is that control?

30 THE WITNESS: The newer plants, I would say, for the most part, have no trouble meeting a two fiber standard, which is the standard in existence in the United States, and I would have

5 THE WITNESS: (cont'd.) to guess that most of them are probably well on their way to being below one. You have two things that you have to take care of - control of the dust, plus implementation of good working practices in your work force. That doesn't exist when you start the plant up.

DR. DUPRE: Would it be a correct generalization, Mr. Reis, that the plants that have a capacity to get down below one are new plants?

10 THE WITNESS: They are certainly in a better position to do it. It depends on how extensive the dust-creating situations are within the operation.

DR. DUPRE: But it's not an iron rule?

THE WITNESS: No.

15 DR. DUPRE: In other words, an older plant can get down...

THE WITNESS: An old paper mill making a latex-bound paper has the same problem as a new paper mill making latex-bound paper - unloading railcars of fiber, good working practices in storing it and handling it within the plant. Once it is thrown into a beater in the water, the fiber is never released again. It's not a source of contamination in the air of the plant.

20 MR. LEDERER: Q. Mr. Reis, what I want to do now, if I may, is to read you from section 145 of the same document, because I think you will see that this addresses your approach or what I take to be your approach, from these slides.

25 THE WITNESS: A. Okay.

Q. "All measures necessary to prevent exposure to any toxic substance by inhalation, ingestion or skin contact shall be taken, and without limiting the generalities of the foregoing, for any toxic substances used or produced (a) the substance shall be isolated; (b) adequate ventilation shall be provided; (c) personal protective clothing or

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Q. (cont'd.) "equipment shall be worn or used;
(d) quick-acting deluge showers shall be provided,
or (e) eyewash fountains shall be provided."

Now, looking particularly at (c), which is,
"personal protective clothing or equipment shall be worn or used",
that seems to be the nature of the kind of examples you have
given us in these slides. Would you agree with that?

A. Personal protective clothing and equipment to
me means respirators, clothing, this type of thing. Let's say it's
a last-resort solution to the problem, I think.

Q. How about, "the substance shall be isolated"?
As in isolated in metal cans attached to saws.

What I'm driving at is...what I'm driving at is
that the regulation really demonstrates an intention to attack
the problem in both ways. The cites are source specific approach
and what I call the general ventilation system approach, and all
I'm really after is whether or not that doesn't appear to you to be
the best way to approach the problem. In other words, they go at
it from both sides and not just from the one, which seems to be
the thrust of the slides that you have given us.

A. The general ventilation situation doesn't
exist in the construction industry, though. How do you generally
ventilate a man cutting a piece of asbestos-cement pipe or sheet
out in the field? Which is a problem that has to be addressed.

Q. Well, you will undoubtedly agree with me that
ventilation problems are not the same in the open air as they are
in a closed room. I mean, that's well recognized.

So let's just for the moment address ourselves, if
we can, to that industrial situation where we are in an enclosed
area, and all I'm suggesting - doesn't it make sense to you to
approach the problem from both angles, where it's possible?

A. I'm trying to avoid being argumentative, but

5 A. (cont'd.) it doesn't make complete sense to me. The primary effort in controlling asbestos dust if you want to get your operation down to the lowest possible levels, is controlling the source that is generating the dust at that point.

DR. MUSTARD: Put it another way, are you in fact saying that if your site-specific control is in place you do not need to worry about the ventilation other than the normal ventilation of the plant?

10 THE WITNESS: I would say, yes, that's probably an easy way to put it.

MR. LEDERER: Q. In other words, as I understand it, it is not your position that you don't attack the problem from both ways, it's just simply not necessary to take on the second route, the general ventilation, because the other is so effective?

15 THE WITNESS: A. Right. Properly installed and operated.

Q. I can presume that there is not universal agreement that that's the case, can I?

A. I would say in the asbestos industry...

20 Q. I'm not talking about the asbestos industry. I'm talking about...

A. Okay, yes. I'm only worried about the asbestos industry, so...there are different problems.

Q. If I can just move on to one other area...

25 DR. DUPRE: Counsel, would you excuse me before you move on, because first of all I just want to compliment you on the line of questioning you have opened here. I think it's enormously relevant.

30 Let me share the following observation: It struck me as you read the Ontario regulation, which you certainly read correctly to the best of my belief, that quite possibly that enumeration that is in that regulation may not specifically cover

5 DR. DUPRE: the kind of protective measures that
Mr. Reis has been describing, because I take, you see, the point
that...and I don't know which of your letters it is...that (c) seems
to perhaps intend that there should be both the kinds of operation-
specific enclosures and, of course, also try to cover personal
protective equipment as well. At this point I must say that my
perception from the reading would be in accordance with the
witness's, which was that when you read (c), (c) was conveying
10 to me the same thing as it did to Mr. Reis - namely, protective
equipment - at this point leaving...and this is enormously
relevant, of course, to our work...leaving open the question of
whether the language of the present regulation is sufficiently
clear and sufficiently comprehensive that, for example, what is
intended by whatever our regulation is can be easily identified
15 in the framework of distinction that an industry expert who is
used to working on an international basis can make.

MR. LEDERER: If ultimately this Commission were
to recommend that...well, first of all, if ultimately the
Commission were to agree with what I want to call the tentative
position that I'm taking here, because as I indicated all along
20 it's very early in my participation here...but if the Commission
were of a mind to take the tentative position I am taking, which
is that both approaches to resolving the problem should be looked
at, and then were to follow from that and say that the regulation
was deficient, it might well want to make a recommendation at
that point to clarify it and I would suspect that that would be
25 a recommendation that we would be happy to have.

If I can now move...

DR. DUPRE: Oh, please, and I thank you exactly
for having pursued this line of questioning in such a way that
it certainly has enlightened me, anyway.

30 Please proceed.

MR. LEDERER: Q. The other question I want to...the other area that I want to canvass with you very briefly is this business of labelling, which relates to the last slide that you showed us on the overhead projector.

You have indicated that one of your specific three recommendations to this Commission is that they say something about labelling, from which I assume you deduce that such a program would produce rather significant results. Is that a fair assumption?

THE WITNESS: A. I think it would assist in this overall educational program and the line of questioning that was being pursued by the Commissioners of, who have you told, how do you get this information out into the field. I think a labelling program mandated by a regulatory body is one of the ways of doing that, and that is our recommendation here - not just that there are a lot of nice work practice books out, but that the work practices described in those books - and these work practices have been developed by the industry, but it certainly could be further looked at by the Ministry or by the government - that these work practices specifically be considered compliance with a regulation.

Q. Now, I may have misunderstood something. I took your recommendation with respect to labelling to be quite discreet and separate from any discussion of books and other educational programs, and I...

A. Yes.

Q. ...I appreciate that you are in favor of those things or you wouldn't have given us that part of your slide presentation.

A. Right.

Q. But looking at the labelling as a discreet recommendation which you are making to this Commission, let me just raise the question to you again, if I may. Do I take it from that that it is your view and the view of your Association

Q. (cont'd.) that such a program would have significant results.

A. Yes.

Q. Now, the striking thing about that caution to me, and I'm sure that this isn't a great revelation to anybody here, is that it's very similar to the kind of caution that one finds now on cigarette packages. In fact, the words...almost the same words are contained within that caution - that breathing asbestos shall be hazardous to your health, I think the words are...

A. Cause serious bodily harm.

Q. Well, perhaps...John, if you could just pass me the caution? I don't want to mislead anybody.

Thank you.

"Breathing asbestos can be hazardous to your health", is what this caution says. I don't know what is on cigarette packages, but it's something akin to that.

DR. DUPRE: I can help you there, counsel.

"Health and Welfare Canada advises that danger to health increases with amount smoked and inhaled."

MR. LEDERER: Thank you, Mr. Chairman.

MR. LEDERER: Q. All of which goes to show, Mr. Reis, that despite labelling on cigarettes, a significant number of people still smoke.

DR. UFFEN: Too much.

MR. LEDERER: Thank you. Too much.

MR. LEDERER: Q. Now, I presume you would agree with that, and it's actually quite a serious question that despite the labelling on cigarettes a significant number of people are still smoking.

THE WITNESS: A. I have no problem with that.

Q. I beg your pardon?

A. I have no problem with that. I agree with that completely.

Q. And that is despite the fact that the health hazards caused by smoking are by now well-recognized.

A. So is the alternative to take the label off now? Will that change the problem?

Q. No, no. The question is, okay, since labelling cigarettes has apparently not had a great affect...or at least, let me turn that around because I'm not sure what the statistics are... since labelling cigarettes has still left a large number of people smoking, I am curious to know what it is that gives you the confidence that a labelling program, in and of itself, with respect to asbestos products, is going to have the significant results that you say it will, particularly...if I can just lengthen this out a bit...considering the problems we have already enunciated in getting workers to use the best kinds of machinery?

What's the rationale, as far as you can see, for the potential success of this program, because I frankly have a little difficulty seeing it?

A. I guess you are looking at it as a labelling program in and of itself. I am looking at it as a labelling program as a part of an industry effort, as a part of a government body effort. Repetition is one of the best ways of teaching people something, and if it keeps on coming up again and again and if it has affected one person's thinking, it has been successful, in my mind.

Now, I'm not saying a labelling program and forget everything else, let's do away with all the regulations and the Commission can close the door on everything that anyone else is thinking of. I hope I didn't imply that in any way.

I am just recommending a labelling program to fit

A. (cont'd.) in with everything else that's going on, and on that basis I think it's a worthwhile program.

5 Q. Can we deduce from that, then, that when you say to the Commission, we recommend a labelling program, that there might be attached to that a rather large number of other items in relation to education and pamphlets that you have talked about...

A. Yes.

10 Q. ...and that as a practical matter it is a much larger recommendation than simply labelling?

A. Yes.

Q. In fact, I suppose we could call it almost a recommendation for an educational program?

A. Somewhere in my talk I think I used those words.

15 Q. I think you did, but it didn't come out in the recommendation.

A. Yes, an educational program.

MR. LEDERER: I think that's all, Mr. Chairman, thank you.

20 DR. DUPRE: May I just follow up on the labelling, Mr. Reis?

Wearing your A.I.A. hat, may I ask you the following question: Are there, in the United States, federal regulations at present that require the labelling of asbestos products?

25 THE WITNESS: Only on certain products. The Occupational Safety and Health Administration has a requirement that products...I'm trying to think of exactly how it's worded, but there is an OSHA-required label on products that do not contain asbestos in the bound-in form of some sort, and they identify types of binders, cement, resinous-type of materials, asphalt-type materials.

30 DR. DUPRE: Now, does this OSHA regulation apply

DR. DUPRE: (cont'd.) to asbestos products manufactured in the United States, or does it apply as well to asbestos products imported into the United States?

THE WITNESS: It applies to all asbestos products... and I'll use the word friable just so that I can have a simple adjective...it applies to all products that are sold in the United States that may contain asbestos in a friable, readily-releasable form.

DR. DUPRE: So this would permit me, at this point, to assume that any Canadian producer of asbestos-containing materials that are covered by an OSHA regulation, who sells his product in the United States, would have a label?

THE WITNESS: Yes.

DR. DUPRE: In asking us to consider a recommendation for labelling, are you doing so because it is possible that Canadian manufacturers who sell an asbestos product in Canada may not label it in the way that they label it when they export the product to the United States?

THE WITNESS: No, I think it goes beyond that. I think the key here is that the label should be educational. The U.S. label reads, "Caution - contains asbestos. Asbestos may cause serious bodily harm". Something to that effect.

So you have alerted the worker to a problem. But again, he has a job to do and you haven't told him how to do it properly. You haven't given him any assistance and I don't think that should be the sole purpose of a labelling program, to wave a red flag and then a man knows that he has got to do something on the job. Let's take a brake mechanic, for instance, and he has been taught by his predecessor to take an airhose and blow the asbestos dust out of the brake lining. The friction materials industry has, on its own, put in instructions, educational instructions beyond that. But the label that they are required

5 THE WITNESS: (cont'd.) to put on only tells the
man that the new brake lining that he is putting on contains
asbestos. He says, fine, I'll be careful with this, but I'll
blow all that dust out of that brake assembly there. The label
doesn't solve the source or resolve the problem, it doesn't
address the source of the problem even then, and therefore that's
10 why we are recommending there be some changes in the thinking.
It's the point that the U.S. label was put into effect...the whole
concept was to alert workers to a hazard.

There is nothing wrong with that, but I think you
have to go a few steps further.

DR. DUPRE: Next?

15 MR. LEDERER: Mr. Chairman, I'm sorry, I just
thought of something...I didn't think of it, I shouldn't take
credit for it, but it's an excellent point that I think has been
made. I wonder if I could just take it up with the witness?

DR. DUPRE: Is that agreeable, Mr. Starkman, or
do you want me to send him to the end of the batting order to
come up at the end?

20 MR. STARKMAN: No, I'm satisfied if he asks his
question now.

DR. DUPRE: Please, then, Mr. Lederer.

MR. LEDERER: Thank you.

CROSS-EXAMINATION BY MR. LEDERER, CONTINUED

25 Q. The thrust of, particularly your recommendation
for an educational program as you have now expanded it, is a
recommendation...I'm sure you will agree with me...that puts the
onus...let me rephrase that, I'm sorry.

What you are suggesting is that what the corporation
will be is to provide information to the worker, right?

30 A. Right.

Q. All right. And the onus as to whether or not the worker responds to that information is on him, right?

5 A. Not at...again, if you look at only the educational program there. Not if we turn this into a broader recommendation, and being new to this whole program, the recommendations of the Asbestos Information Association to the Commission in our written submission calls for specific work practices as sufficing to serve as compliance with a regulation.

10 If the educational program is the end of the line, yes, the onus is on the worker. But if that manufacturer or that employer is ultimately responsible for being in compliance with a regulation that requires certain...and that compliance is measured by taking certain work practices, then he will hopefully carry it all the way through.

15 Q. I think you will agree with me, and I think this is the end of it, that quite apart from that educational program it would be part of the Association's position that responsible regulation is required and that the corporations be required to respond positively to that regulation process.

20 A. I think the very first statement in our written response is that responsible regulation be adopted, or somewhere in that..

Q. That, unfortunately, is where my newness to the procedure comes in and if I have wasted time with that, I apologize.

DR. DUPRE: Not at all, Mr. Lederer. Thank you.

25 Mr. Starkman?

MR. STARKMAN: I would like to thank the Commission and others who waited for me earlier this afternoon. I was unavoidably detained and couldn't make it because of the schedule change, but I thank you all for waiting.

30 DR. DUPRE: It's quite all right, Mr. Starkman.

CROSS-EXAMINATION BY MR. STARKMAN

5 Q. Mr. Reis, you are the president of the Asbestos Information Association?

A. Yes, sir.

Q. And you are also a vice-president of Johns-Manville?

A. No, I am not.

Q. You are not a vice-president?

10 A. No.

Q. Do you have any...are you employed in any way, in any capacity with Johns-Manville?

A. Yes, I am.

Q. In what capacity is that?

15 A. My title is director of asbestos policy.

Q. What would your job functions there entail, being director of asbestos policy?

A. I am responsible for co-ordinating the various corporate entities within the corporation as far as how they work together on resolving many of the problems in the asbestos area.

20 Q. Could you be a little more specific? Co-ordinating the various corporations and how they resolve their policies in asbestos areas?

25 A. The functions within the corporation, the health, safety and environment department and their interaction with various operating divisions, the corporate relations department and their interaction with various operating divisions - the divisions who may be manufacturing products and distributing those products.

30 I also serve as Johns-Manville's representative to the A.I.A., and in the same position I also interact with the U.S. regulatory agencies.

Q. The A.I.A., I see in your submission that the A.I.A. submission has about fifty members, is that correct?

A. Yes, some fifty members.

Q. How many Canadian members would it have?

A. Seven, six.

Q. Six or seven Canadian members. And how many...

are you aware of whether or not there are Canadian mining or manufacturing of asbestos products who are not members of the A.I.A.?

A. Yes, there are some.

Q. How many would that be?

A. I have no idea.

Q. The A.I.A. is a voluntary organization?

A. Yes, very much so.

Q. It's membership is restricted to persons who mine and manufacture asbestos?

A. There are two categories, three categories of membership - the miners, those who manufacture asbestos products and those who...there is an associate membership where those who further process or distribute asbestos products can participate.

Q. What would be the cost of membership in the A.I.A.?

A. It varies. For an associate member it's five hundred dollars. It varies for any of the other members based on their consumption of asbestos.

Q. For example, is Johns-Manville the largest consumer of asbestos in the United States?

A. Yes.

Q. What range would it's membership fee be in?

A. It depends on the budget.

Q. What is the budget of the A.I.A.?

A. The budget has been anywhere from three hundred thousand dollars to a million dollars.

Q. What would Johns-Manville's contribution to that be?

A. Anywhere from twenty-five to thirty-five percent.

5 Q. You are the president, and how do you get to be president of the Association?

A. You are elected by the membership.

Q. One vote per member?

A. One vote per member.

Q. Including associate members?

10 A. No associate members vote.

Q. One vote per member, and that's how you get to be president.

Are there other people on the board of directors?

A. Yes.

Q. How many people would that be?

15 A. There are six.

Q. They are elected, as well?

A. Yes.

Q. Their salaries are paid by the A.I.A.?

A. There are no salaries.

20 Q. So it's a volunteer position?

A. It's a volunteer position and your expenses... any expenses as far as meetings are paid by the corporation which you are a member of.

Q. So, for example, you are here today as president of the A.I.A., but...

25 A. The A.I.A. isn't paying for it.

Q. Right. Whatever expenses there are might be picked up by your employer?

A. Yes.

Q. How much time would you spend on A.I.A. business in a year?

30 A. In a year?

Q. Yes.

5 A. I would spend somewhere between twenty-five and thirty percent of my time, probably a little more now that I am president. I have only been Johns-Manville's representative to the A.I.A. since February of 1980.

Q. That's for a two-year term?

A. It's a two-year term, starting in September of 1981.

10 Q. Now, of the A.I.A.'s budget...what is the budget for this year? Can you tell me?

A. It's four hundred and sixty thousand dollars.

15 Q. I noticed in your submission of the A.I.A. it says, "The A.I.A. is a nonprofit organization representing about fifty companies who mine, manufacture and market asbestos".

Now, I'm interested in the types of representation that entails, and the budget breakdowns for that. For example, I guess one of the things you are involved in is marketing, because that's what the members are concerned about - marketing of asbestos products?

20 A. No, the Association does nothing in the market area. It gathers no market information. It's an information association and it distributes educational information which, since its inception, has been basically educational information in the health and safety area.

25 Q. So that's what you say is the prime purpose, or what is the prime purpose of the A.I.A., to distribute information...

A. It's an information association, right.

Q. Information about the health effects of working with asbestos, is that...?

30 A. Among other things, yes. There is some information on asbestos products, obviously. There is information that is available from individual members. The Association has

5 A. (cont'd.) no...I just want to make sure...has no publications that I'm aware of that talk about specific asbestos products as far as promoting the products is concerned.

Q. So what would the budget be spent on?

10 A. The budget is spent on...just to take the items down...preparation of responses and information, gathering of information and submission of information to regulatory agencies, including bodies such as this right here. That accounts for probably a third of the budget, and I'm including in that peoples' time as well, and the staff, there is a staff of two gentlemen.

15 The operating expenses of the office itself come to probably twenty, fifteen or twenty percent, and that's the secretarial staff, equipment - most of which we rent for the office...

Q. Other than the operating expenses? What's the other part?

20 A. Okay. The balance of it is production of literature and development of educational programs, and this type of thing, as well as the holding of...there is an annual conference held every year, an industry/government conference, which is attended usually between a hundred and two hundred people - discussions of updating regulations, what is happening in the regulatory area, this type of program.

25 I'm trying to picture the budget in my mind and I don't have those figures right at the tope of my head, so I'm trying to construct it as I'm sitting here.

DR. DUPRE: In the literature area, Mr. Reis, roughly proportional, is the work practice...the publication of work practice brochures the major item?

30 THE WITNESS: At this point in time, yes. That has been where most of our efforts have been put.

DR. DUPRE: And there has never been promotional

DR. DUPRE: (cont'd.) literature for asbestos products? That's done by the firms themselves?

THE WITNESS: Yes.

DR. DUPRE: So in your literature program at the moment, the work practices thing in recent years is what accounted for the bulk of it?

THE WITNESS: Yes.

DR. DUPRE: Prior to that, was there a literature program or not?

THE WITNESS: No. In the early days the budget was significantly lower.

DR. DUPRE: So the literature program, then, is basically a program that was designed from the beginning, and remains, oriented towards practices in the work sector...

THE WITNESS: Yes.

DR. DUPRE: ...in the use of asbestos products.

THE WITNESS: Yes, and I guess there is probably one other thing I should add. We have made an attempt to make sure that all of our members and anyone else who is interested is fully aware of the regulations. I think that has been done more in the United States than it has been in Canada. Our Canadian membership has increased slightly, I guess, in recent years, and thus more of our participation up here.

MR. STARKMAN: Yes. Thank you, Mr. Chairman.

MR. STARKMAN: Q. I'm looking here at some of the, I guess, publications that were filed with your submission. These are the type of thing we are talking about?

THE WITNESS: A. Those were the original set of work practices, right.

Q. A couple of things I notice about them. If you take one of these, like Fabrication and Use of Asbestos-Friction Materials, how many of these would be printed, do you think?

A. I have no idea.

Q. No idea.

5

A. These all predate me. We have produced new ones since then.

Q. These are the ones that were put in with your submissions, which is January 6, 1981..

A. Yes.

10

Q. ...which is the date on the letter to this Commission, January 6, 1981. These came with it.

15

A. There should have been...well, that is the original uniform set of work practices developed by the Association. Since that time the Association has taken the lead in working, as I said, more closely with some of the other trade associations who are individually involved and offer a better route to distribute work practices to their membership, and in turn to those people who would be working with the product. So that the second generation of those booklets have been produced by the Asbestos-Cement Pipe Producers Association...obviously more closely involved with the asbestos-cement pipe industry than a general trade association.

20

The one you are just putting down is the Resilient Flooring brochure there, developed by the Resilient Floor Covering...

Q. I feel like I should be working at a trade show.

A. You are doing very well.

25

The friction materials one is put out by the Friction Materials Standards Institute. It is available from the Asbestos Information Association, but the major route of distribution is through the friction materials industry - those people who manufacture brake linings and in turn talk everyday to the people who distribute and sell those, who in turn talk to the man who will eventually be using them.

30

Q. This one, the one you were just talking about,

Q. (cont'd.) is dated 1978?

A. Yes.

5 Q. Okay. These...all these colored ones predate 1978?

A. My mind tells me 1973, 1974.

10 Q. All right. Now, we are left with two further ones - one is printed on the back and says 1980. The other one - I don't know where and when this one was printed, but...this one was printed in 1977.

A. Right.

15 Q. Now, you are saying that there are other pamphlets, that we we don't have before us, which are distributed out of the A.I.A.'s budget - printed and distributed out of the A.I.A.'s budget?

A. There are other pieces of literature, yes.

Q. Okay. Could you undertake to provide the Commission with those other pieces? I, for one, would be very interested in seeing them.

20 A. We will gather whatever else is there and get it in to the Commission.

Q. Now, these pamphlets, such as they are, when you have...perhaps before I get into them...I do note another thing about them is that these particular ones, these colored ones seem to be particularly American oriented. Would that be fair to say that? As opposed to Canadian oriented.

25 A. They were produced at the time, right after the U.S. regulations, OSHA regulations, or sometime early after the U.S. OSHA regulations came into effect, and they were designed for a couple of purposes - to be a work practices manual, but to make everyone aware of the Occupational Safety and Health Regulations as well.

30 Q. So are there similar pamphlets for Canadian consumption?

5 A. No. The second generations of pamphlets were designed specifically to be work practice pamphlets, and there was no effort, for instance, if you compare the two, they are nowhere near as thick. It doesn't pay. I don't think anyone is going to sit down and read through, any worker who is on the job and is given a pamphlet isn't going to sit down and read the fine print of the Occupational Health and Safety regulations on the back of that brochure. That one, yes.

10 Q. The NIOSH regulations are in this brochure.

A. I'm sorry?

Q. Some of the NIOSH regulations and OSHA regulations are in here.

15 A. Yeah. I don't, you know, it was our feeling that the worker isn't really interested in understanding the mechanics of how the monitoring takes place.

Q. Is it the purpose of these brochures to get them into the hands of the workers?

A. Yes.

20 Q. How would that process be accomplished by your Association?

A. I tried to describe it earlier...

Q. Do you approach unions with these?

A. I'm sorry?

Q. Do you approach various unions...

25 A. We have made the unions aware that they are available. I can't answer. To my knowledge, we have never had a request for copies from any of the unions.

Q. Do you give them away?

30 A. Yes. In individual amounts, we supply them. If someone wants a thousand of them...we've had members ask for a thousand or two thousand...and they will pay for the printing costs.

Q. Have you, in your tenure as president, approached any unions to talk about the distribution of this pamphlet?

A. No, I have not, and I am not making any statements to the effect that there has been a denial on the part of anyone in labour to use them. I am not trying to imply that.

Q. I'm not trying to imply that either. I'm trying to explore the extent of the effort you have made to distribute these pamphlets to the various parties who are affected.

A. Right.

Q. Now, when you were giving your presentation you talked about various products that are made of asbestos, and I noted that the first one I heard you talk about, which was asbestos pipe, that you mentioned, I believe, that there was no cost-effective alternative to the use of asbestos to make...

A. I was reading from the...

Q. ...a pipe of that sort.

A. I was reading the statement made by the California/ Nevada section of the American Waterworks Association and the Environmental Protection Agency.

Q. Do you agree with that?

A. In certain areas, I do agree with it very much, yes.

Q. In what areas don't you agree with it?

A. I think there is...the economics of the pipe industry are such that at certain sizes and dimensions the various piping materials lose their cost-effectiveness and others become more effective. In other words, I don't know of any forty-eight inch plastic pipe that is sold in the marketplace.

I shouldn't say...it is not a common product in the marketplace..the reason being that when you design a piece of pipe of that diameter, it has such a thick wall made of plastic,

5 A. (cont'd.) which is an expensive material, that it no longer is cost-effective. Can you make a forty-eight inch diameter plastic pipe? Sure you can.

Q. What about the cost-effectiveness at smaller diameters?

10 A. The cost-effectiveness of asbestos-cement pipe in the United States...again, this is the area that I have to address because I am more closely involved with...is probably in the twelve to twenty-four inch range. There is very little six-inch asbestos-cement pipe sold anymore, or three inch or four inch, or telephone duct. It's the performance, how the pipe is used, what is expected from the pipe.

15 Most of the pipe is also pressure pipe, water pipe, as opposed to waste or sewer pipe.

Q. Let's run through a few more of these. You have talked about brakes, and the use of asbestos in brakes. I guess you are aware then, some European countries don't use asbestos in brakes at all?

A. No, I'm not.

20 Q. It is my understanding that in Sweden they don't allow asbestos to be used in brakes, is that...

A. They don't manufacture them.

Q. They don't manufacture them there, but they have similar...what about, is there a cost-effective substitute for asbestos in brakes, to your knowledge?

25 A. It's not a simple yes or no answer. Certain sizes of brakes, certain applications of brakes, yes, there are cost-effective substitutes.

DR. DUPRE: Are these all confined to disc brakes? Is it the same for drum brakes?

30 THE WITNESS: As far as I know now, every product in the marketplace..and the Society of Automotive Engineers is

THE WITNESS: (cont'd.) meeting next week and is going to have another panel on substitutes. The automobile
5 manufacturers have been very secretive in the development of nonasbestos drum brake products. As far as I know, there aren't any commercial drum brake products out in the United States or Canada.

So I guess the answer to your question is, yes, it is basically confined to disc brakes.

10 MR. STARKMAN: Q. What about the floor tiles? You talked about the problems of other ones, but you didn't talk about the cost-effectiveness of using alternatives to asbestos padding underneath the tiles - whether it be tiles or the roll or sheet?

15 THE WITNESS: A. We have two specific problems - the choice of flooring in the first place, people can use carpet or wood versus any type of resilient flooring, so that choice will always exist and has existed since the inception of both vinyl asbestos floor tile and rollgoods flooring.

20 The choice of substitutes within the resilient flooring product area, there is no cost-effective substitute in the rollgoods area. As I understand it now, there are some substitutes that are considered cost-effective in the floor tile area.

There are certain drawbacks, tradeoffs, that are being made by the industry, I would have to assume.

25 Q. I don't understand that last remark - there are certain drawbacks or tradeoffs made by the industry?

A. Production process problems that probably cost them a little bit more, and the tradeoff is that they eliminate asbestos...some problems there.

30 Q. For all these areas where you indicate you are not aware of a cost-efficient alternative, what type of information...

Q. (cont'd.) where would you get the information to make that deduction?

5 I guess what I'm asking is, who did the studies that you rely on to determine whether or not they are cost-effective alternatives?

10 A. There are a number of contracts that have been let by various government agencies around the world to study substitutes as a part of their regulatory process, and these have been a big source of information. The rest of it has been gathered in my experience over the years in dealing with uses of asbestos.

15 Q. Dealing with the first one, these studies you referred to prepared by governments and others, can you provide us with the names of those studies? I'm sure the Commission would be interested in having a look at the cost effectiveness of alternatives.

A. Yes. Some of the research work that has been undertaken for the Commission contains those studies. There is a corporation in Massachusetts, GCA Corporation, which has done a study for the Environmental Protection Agency.

20 I can send you the reports and save you writing, if you would like.

The Research Triangle Institute did an extensive study on substitutes and, in fact, technological feasibility, for the Environmental Protection Agency.

25 Those are the two major studies that I'm aware of. There have been others done in England. I can't quote any off the top of my head.

There have been quite a bit that has been done in that area.

Q. You have looked at these studies?

A. I have looked at most of them, yes.

30 Q. Well, most of them. I'm confused. You tell me two and there's some in England, and you say you've looked

Q. (cont'd.) at most of them. Have you looked at these two that you mentioned to me?

5 A. I have looked at most of them. They have been developed over four or five years and I honestly do not remember the name of each one, who did the work.

Q. But, I'm asking you...

10 A. Those are the two that I have actively participated in, for that matter, and that's why I remember them.

Q. Well, would you undertake to provide us with copies, or at least information as to where we can obtain copies of those studies?

I'm talking about the ones that Mr. Reis referred to.

15 DR. DUPRE: I believe, Mr. Starkman, we already have those studies, and in addition, for your information, I think...I am given to understand by our research director that Dr. Bragg's study, which will be released by the Commission as soon as it is completed, within the next...I think that one is for the end of the lineup, but it will be about two or so months from now... includes, among other things, an assessment of the different studies that are available with us right now.

20 THE WITNESS: I would be glad, though, to go back and try to put together a bibliography of all the studies that we can identify, and submit that to the Commission.

25 MR. STARKMAN: I was asking those questions because I was interested in getting the names, but I am also interested in finding out on what information this witness is relying when he tells us that he knows that there are no cost-effective alternatives in these various areas...where the source of information comes from.

30 So he has told us the names of two studies, and 'some other ones', which he is going to provide us with at a future time.

5 MR. HARDY: It would be helpful, I think, to remind the witness of a third study of which he is aware and which I know the Commission has, which is not really a study, but rather a workshop conducted by the Environmental Protection Agency in which fifteen or twenty presentations were made on the use of substitutes.

10 THE WITNESS: That's right. It was a three-day conference in Washington in the summer of 1980, which covered substitutes. There is an extensive publication that came out of that.

MR. STARKMAN: Q. When I was looking at the slides you showed earlier, and you were talking about asbestos insulation, I noticed that the bags that were shown on the screen, I couldn't see any warning label. Is that because of the angle of the picture?

15 THE WITNESS: A. Yes.

Q. Where is the warning label placed on the bag?

A. The warning label is now on the sides of the bags, in six languages.

Q. How large would it be?

20 A. The bags of asbestos...the label, each individual of the six language labels, each one is probably eight inches, seven inches long, and two or three inches high. Three inches high, probably.

The side of the bag, the external side...and we can go back to one of those slides...it would say on it in six languages, right around the side...

25 Q. Why can't the Asbestos Information Association recommend to its members in Canada that they put those labels on the bags? Why do you come to the Commission and say, make a recommendation that the government force them to? Why doesn't the Asbestos Information Association come forward with that recommendation to Canadian members?

30 A. Every Canadian asbestos producer puts that

A. (contd.) label on every bag that's sold around the world, as far as I know.

Q. Including the ones in Canada?

A. Yes.

Q. Well, then, what is the thrust of your recommendation to the Commission?

A. The labelling of asbestos products...the second stage, beyond that.

Q. Why can't you make that recommendation to the members?

A. We have.

Q. And they won't comply?

A. What we are trying to do is making it mandatory. Not everyone is a member, as you so readily pointed out. We want a standardized label and we want something that is acceptable to... universally, I think, if possible, to regulatory agencies.

I think one of the worst things that could possibly happen is that we have a mishmash of regulations. We have a very real concern about that in the United States. We have had certain actions taken on the part of legislatures, state legislatures, to require a label. It would be very unfortunate if a product that went out into the field had twenty-six labels on it, all over the place. I just think it would dilute the effectiveness of the whole labelling program.

Q. I want to deal with your remarks in your submission concerning the asbestos standard at nonfixed work sites, as you call them. I'll just call them construction sites, because that's what I think of them as, and probably includes most nonfixed work sites.

Now, at first I didn't...I read through quickly your brief on the standard for nonfixed work sites, and I quite frankly didn't understand it. Can you explain to me what you are

Q. (cont'd.) proposing as a standard for nonfixed or construction sites?

5 A. I think you have to take a look at the individual product categories and there are products that in the normal handling procedures...insulation products are probably, again, the best example, friable insulation products...although there aren't any of them left, to my knowledge, and I'm just trying to think of a product...but there would be a category of
10 products where handling, normal handling and use could release fibers above two fibers per c.c. That type of handling operation or that type of operation would be subject to the regular manufacturing standards.

15 There are work practices that could be used, and are regularly used, for a category of products that normally do not emit fiber emissions above the two fiber level. That product category would have those work practices become mandatory as far as compliance.

20 Now, a man could choose to use some other method of compliance other than a certified work practice, but then that alternative would have to meet the standard manufacturing regulation, whater it may be.

25 Then there are a group of products, as long as you don't do certain things with them, they don't release fibers in any significant amount and there would be no mandatory work practices involved with those.

30 Q. Well, if I could just go...assume this Commission were to recommend and a standard was to be adopted, whatever that standard was, then in a construction site where you would have emissions above the normally-accepted standard on a time-weighted average, or just at any given moment, what would you recommend? What is your recommendation on how to deal with that situation?

A. You would have...that standard would apply.

5 Q. The standard would apply. So if the standard would apply, then a construction site, like manufacturing sites, would have to meet that standard?

10 A. For those product categories. Now, for another product category where work practices could readily be instituted to keep those counts below one, as long as a man was following those work practices he would not have to do anything beyond that as far as a regular standard.

He would not have to, in the case of the United States, he would not have to do regular monitoring if he used that saw and was using it properly - hooking it up to a vacuum cleaner with the proper equipment on it.

15 In other words, the work practice would be certified and then would be adopted as a means of complying with the standard.

20 Q. Essentially what I understand it comes to is, if it is certified that the products or the work methods...products or the method of using the products...were such that that industry or that activity never goes over the standard, then they don't have to go to the same type of monitoring procedure?

A. Right.

25 Q. And if it's shown that it ever does go above, then they should be subject to the monitoring procedure? If an error has been made somewhere in setting up that regime?

A. Yes, or as I say, there's always a way of improperly doing something.

30 Q. Yes. Well, on this improperly doing something, you talked at some length about the person who doesn't use the pipewrench to cut the pipe, but uses the...

A. The abrasive disc saw.

Q. Uses the abrasive disc saw because they are easier methods of cutting. But isn't it true that this abrasive disc saw is obviously made available by the employer?

I mean, you are saying they have a bunch of tools there and one of them is the abrasive disc saw.

A. I guess most of the time, yes, it was made available.

Q. I mean, it's not the employee's saw, it's the employer's saw?

A. Yes.

Q. So if it wasn't there, it wouldn't be used?

A. Not necessarily.

Q. Well, I don't understand that. Are you saying that employees are going to bring their own saws?

A. I started to think of the asbestos-cement pipe industry, but I'll carry it into the asbestos-cement sheet industry, and I am not familiar enough with trade union practices as to whether a man may supply his own tools in certain instances, or not.

Q. Well, I guess what I'm suggesting is this, that employees work under the supervision of management. Are you with me on that?

A. Yes.

Q. So if the management is supervising the work site properly, they can control the type of activities that are being performed on their work site.

A. This may very well be. Yes, sir.

DR. UFFEN: May I ask a question here?

On a work site of this type would there be any occasion to use an abrasive disc saw for other than cutting asbestos products?

THE WITNESS: There could be in that it's probably used on other types of pipe as well; and it might be a

THE WITNESS: (cont'd.) standard tool in that contractor's, in that worker's kit of tools.

DR. UFFEN: Like fiberlgass?

THE WITNESS: Well, maybe, but maybe, using pipe as an example, not every job uses asbestos-cement pipe. There may be concrete pipe or clay tile pipe as well, so the standard equipment truck carries all of these tools out to the job and one day they may be working...or one week they may be working laying a line of concrete pipe and they use the abrasive disc saw. The next week they are on the job with asbestos-cement pipe because that's the one that the contractor has, and they never bothered to take that abrasive disc saw out of the tool wagon where it would be used.

I think that's an example. The other thing is, you are talking about, I don't know what the number of contractors are doing construction work in the U.S. or Canada, but you are talking about a significant number of people and a changing group of corporations...small companies, let's put it that way.

MR. STARKMAN: I got a little sidetracked onto the saw. I was talking about the standard for construction operation.

MR. STARKMAN: Q. This is your submission or the recommendations?

THE WITNESS: A. Right.

Q. I summarized it a minute ago and I was thinking about it, it seemed a little simplistic because the presentation is so long. Is there anything else that...is there anything else I'm missing in terms of a construction standard?

Basically, as I understand it, what the Asbestos Information's concern is that in construction work where you have a lot of smaller employers, if they have an absolutely safe product - safe in terms of it's below the acceptable, below the mandated level of emissions, or a safe work process - then they

Q. (cont'd.) ought not to have to go to the same lengths in terms of monitoring the workplace?

A. Yes.

Q. What about in terms of medical examinations for the employees?

A. They would not have to give them medical examinations, as well. It's an area that I think has to be taken a look at very closely, because you have a transient work force. That work force doesn't continue on a year-to-year basis with the same employer, and by having a very strict standard for medical examinations, similar to the one...that is strict, but very real and readily adopted by the manufacturing industry...I guess we have just concluded that the same type of standards do not really operate within the construction industry.

Q. What standard of medical examinations do you recommend for adoption?

A. I haven't read that over in a while. I would have to take another look at it again.

Q. Well, Johns-Manville, how often are medical examinations done?

A. Medical examinations for manufacturing workers?

Q. Yes.

A. We have a pre-employment physical and an annual physical.

Q. You don't think that that should be carried through into construction?

A. That's what the law says. There is a significant feeling within the medical industry that even that isn't realistic as far as providing any significant benefit.....annual x-rays for a man who was just recently employed in the asbestos industry, who is twenty-three years old.

Q. But my question was, that is the standard

Q. (cont'd.) that is being applied ...

A. That is the standard that is in effect in the United States, yes.

Q. In both manufacturing and in construction?

A. Yes.

Q. And you are recommending a change in construction?

A. Yes.

Q. And we don't need annual medicals. How often should they have medicals, mandatory medicals?

A. I don't remember exactly. I can't answer that, I'm not that...

Q. Well, in your opinion?

A. I'm not qualified to have an opinion. I'm not an expert.

DR. MUSTARD: He doesn't have a union card.

MR. STARKMAN: Well, if he is not qualified...

MR. STARKMAN: Q. It seems you are not qualified to express an opinion, but you are willing to express an opinion that they ought not to have them annually, but you are not sure how often they ought to have them?

THE WITNESS: A. I have seen, and I cannot remember where or the breakdown for workers and their exposure, but I have seen recommendations saying that medical exams should be offered over periods of time, depending on age and amount of exposure that could have existed for the worker. I don't remember it and rather than trying to speak factually and make recommendations to you and put things in the record that really don't carry any meaning, I just don't think it's worth it.

Q. But in your personal opinion there should be some medical examinations at some periodic basis?

A. There should be some medical examinations, but

5 A. (cont'd.) those medical examinations and the information from those medical examinations should be...and the history of those medical examinations...should be available at some point that the man has a traceable medical record. There is no sense in giving him a medical examination in California, and then he moves to Missouri or works in northern California for another contractor, and you have a series of x-rays and medical exams and records that are spread all over the place.

10 DR. MUSTARD: Excuse me for a moment, counsel.

Then what should be advocated is some kind of universal code number for members of the work force that could be tagged onto records so that...

15 THE WITNESS: I don't know. I really don't have the easiest answer. It has been discussed at length.

MR. STARKMAN: Q. What I'm suggesting is that it should be, that the same regulation should apply to whatever type of exposure there is to asbestos, whether it be manufacturing, construction or mining. Whatever is decided, it should be the same.

20 I would point out, and I don't know if the witness is aware of this, but Canadians as a whole don't have the same degree of mobility as Americans in terms of their moving great distances with as much frequency.

25 DR. MUSTARD: I just might comment though, it is a sizeable problem in this jurisdiction as well, the keeping of adequate information bases about the health records of members of the work force and what they have been exposed to. I'm just curious as to whether there has been any attempt in the United States to create an effective method of making sure that information doesn't get lost.

30 MR. STARKMAN: Q. Do you know how it's done in the United States now? To try to keep track of that information?

Take the guy who works in California one year and

Q. (cont'd.) in Missouri and in Massachusetts...

5 THE WITNESS: A. Yes. He has his medical exam and at that point in time he has access to his records, as does his local physician, and then off he goes and those records, if he requests those records from the physician and chooses to carry them with him, then you have them. But I don't think that is usually the case, and no, I don't have any experience in that area.

10 I would guess that the regulations, that the medical exam just disappears and he goes off to another work site and is or is not given a medical exam, depending on how ...

Q. The government doesn't involve itself in those exams in any way?

A. No, it does not.

15 Q. What about in manufacturing sectors, are they involved in any regulation, supervision of the medical exams?

A. They do, and it's part of an inspection, check the records of the manufacturer and see that he has those records on file and readily available.

20 Q. You mean the government check to see if they have, in fact, been done?

A. Yes. It's part of an inspection, yes.

Q. How often would a government inspector come to a manufacturing plant?

A. I cannot answer that.

25 Q. Well, can you give us an idea? Are we talking annually, monthly?

A. Oh, no. It depends on the facility and the area office. I think over the past ten years they have probably come two, three or four times to check a Johns-Manville facility. Somewhere between two and four times. We are not inspected annually.

30 Q. Is that over ten years? Two to four times over

Q. (cont'd.) ten years?

A. That's what I'm saying, since 1972, since the standard went into effect.

Q. And the monitoring, the air monitoring, that's done by the individual corporation?

A. It's usually done by the individual corporations or their insurance companies, or an outside consultant.

Q. Is the monitoring device certified in any way before it's used, the actual apparatus certified accurate, certified reliable, certified in any way?

A. I can't answer that question. I don't know. I was just looking around here. We had an industrial hygienist here, but he has left.

DR. DUPRE: If I may just be indulged a question by counsel, when you are referring to inspectoral visits in the United States, guesstimating two to four times since 1972 to most recent memory, say per plant, you are talking about OSHA inspections?

THE WITNESS: Yes.

DR. DUPRE: I cannot help but ask out loud how that kind of statistic, which I don't challenge for a moment, fits in with the description of the OSHA approach to workplace regulations that exists in the regulatory literature - namely, of course, that OSHA has supremely followed a policeman approach to workplace regulation, as distinct from, for example, trying to rely more on something that we in this jurisdiction call a joint responsibility system.

Am I characterizing the literature on regulatory practices of OSHA wrong by referring to them, indeed, as the policeman approach, what the office that I know have used?

THE WITNESS: I think the other part of it is the way the individual inspector has come into the facility.

THE WITNESS: (cont'd.) I am not aware of any major policeman-type problems that my corporation has had with the Occupational Safety and Health Administration.

I'm talking about our plant and our facilities. There may be other hazard areas where they have put more emphasis. The asbestos-manufacturing facilities in the United States are limited. Our asbestos industry is not a giant industry when you look at industries in the United States.

DR. DUPRE: This might well leave intact, of course, the other hypothesis about the policeman approach - namely that there is a major gap between the concept of the approach and the capacity of the government to implement it.

THE WITNESS: Yes. And that statement is particularly true in the construction industry.

MR. STARKMAN: Q. I was asking about the monitoring equipment, the device itself, that is used. You said you didn't know whether it was certified in any way. There's no regulation about it having to undergo annual checkups or annual overhauls?

THE WITNESS: A. I honestly don't remember.

Go through that book you have there. It may be in there.

Q. Which book are you referring to?

A. Work practices.

Q. Well, no, I can go through the regs, but I was asking you, being close to the field, what in fact goes on in practice.

A. We have a regular program within the corporation that I work for to check the monitoring equipment, and we have four industrial hygiene, our own industrial hygiene facilities in the United States that do all of our own monitoring for asbestos and other hazardous materials, and regularly we check out the various operating facilities.

Q. The people that operate these monitoring

Q. (cont'd.) devices, do they have any...is there any special program to train them?

5 A. They are all sent, most of them are sent to NIOSH or OSHA schools.

Q. What sort of training programs...

A. Plus inhouse training.

Q. How long would the government training program last?

10 A. I don't know. I think those courses are...my mind tells me a week or two weeks.

Q. All right, and who pays for that?

A. Johns-Manville.

Q. So whoever wants the technician trained would pay for it?

15 A. Would send them to...right.

DR. MUSTARD: Can I ask a question? Do you have joint management/labour approach on this monitoring equipment? Is there a joint approach to it? Do you know what I mean by asking that question?

20 THE WITNESS: I'm not sure.

DR. MUSTARD: Well, what I mean is that you would have a joint team of management/labour concerned with the health and safety of the workers in the plant, and that labour would be on that team as well and they would understand the monitoring apparatus and understand the procedures that are being used to standardize it, etc., and could object if they felt it was not being adequately carried out?

25 THE WITNESS: I do not think we have that type of a setup, that I am aware of. Our monitoring is done by our own industrial hygiene staff. I do not think there is a labour representative who accompanies...

30 DR. DUPRE: I take it, though, that you are, for a

DR. DUPRE: (cont'd.) moment, speaking from your knowledge of Americans?

THE WITNESS: Yes,.

DR. DUPRE: At J-M operations?

THE WITNESS: Yes, I am.

DR. DUPRE: Leaving open the possibility that with regard to J-M operations in Quebec, they would conform to the laws of that province?

THE WITNESS: Yes. I would hope so.

MR. STARKMAN: Q. So as I understand it, in the United States or to your knowledge, the Johns-Manville...just using Johns-Manville as a corporation...a technician operates this equipment and takes the readings?

THE WITNESS: A. Yes.

Q. Then what happens to those readings?

A. Samples would be sent to an outside laboratory, and possibly an inside laboratory, to be, to have it...the membrane filter would be sent out to at least one source, and possibly checked inside, and have the fiber counts done.

Q. Should there...should the fiber counts indicate that they are above the acceptable standard set by the government, what happens then?

A. In the case of, again I have to talk as far as my experience within Johns-Manville is concerned, but the operating entity that has a fiber count above that area would be advised to correct it immediately, and secondly, there would be some type of taskforce or work group put together utilizing the staff functions - engineering and health, safety and environment to tackle the problem, and a program would be set up to correct it.

Meanwhile, if it were above the standard, the two fiber standard in the United States, protective measures would be taken, personal protective measures would be afforded the employees.

5 Q. If you get a reading back that's above the two fiber standard, as I understand what you are saying, that internally, in Johns-Manville, they would appoint a taskforce of some people to go and look at it and try to correct that situation?

A. Well, firstly, the industrial hygienist would... well, the manager of that facility would be advised of the problem.

Q. Yes?

10 A. He would take what corrective measures that he felt he could take within his operation without...I guess it depends on the problem. I have to...

Q. What sort of time lag are we talking about here between the actual sampling and the receipt back of the analysis?

A. I don't know.

Q. You don't know?

15 A. No.

Q. Well, between when they find out that it's above the acceptable numbers, what sort of time lag would there be between getting that information and the putting into effect of correct measures?

20 A. It could be from a week to a couple of months, depending on the extent of the problem.

Q. And meanwhile, this problem may be continuing?

A. Once the reading came in above that level, as I say, personal protection would be offered to the worker.

Q. What sort of protection would be given?

25 A. If it's above the two fiber standard, in Johns-Manville we would give him special clothing, respiratory protection. These are offered to all the workers, but it's mandatory that they be enforced if the standard is above two fibers.

Q. When that happens, then all the workers would know that the place is above the two fiber level?

30 A. Yes. The man would be issued a respirator and

A. (cont'd.) told that he has to wear a respirator, and it would be posted on the board as well.

5 Q. Would the government be advised that the standard was above the two count?

A. I don't think there is anything in the regulations to require that.

10 Q. Well, I'm just asking you. Do you think that if a manufacturer or employer is violating the acceptable standard that there ought to be some sort of sanction imposed?

A. Do I think some sanction should be...like what?

Q. I said some sanction. I didn't ask what.

15 A. I think that's kind of an open-ended question. As far as an immediate fine, action taken, no, I do not think so. I don't think that accomplishes the goal of correcting the situation.

Q. What incentive is there for the manufacturer to correct the situation?

A. What incentive is there?

Q. Yes.

20 A. There is the regulation to be met, and I happen to believe that most of the people that I am familiar with are responsible enough to meet that regulation. They have internal policies, internal managers are responsible. An internal manager who has the responsibility for correcting that problem and is later found to have a problem on another inspection, and it has not been
25 corrected, he could very well find himself looking for another job.

Q. So essentially what you are telling me is that the problem of correction should rest with the corporation because they will do their best to correct it and they will take whatever means are necessary?

30 A. I think the corporation is the first one there and the one in the best position to identify the problem. I don't

5 A. (cont'd.) think by saddling a government with a regulation that they have to hire twenty or thirty thousand inspectors or fifty thousand inspectors to enforce that it is going to accomplish anything. I just don't think that would be...that's what would happen.

10 DR. DUPRE: If we are in the domain of incentives, in the real world would it be so that indeed a major incentive is the kind of tort liability that is in place in the jurisdictions in which a hazardous-products firm is operating?

THE WITNESS: I think tort liability is definitely an incentive, yes.

15 DR. UFFEN: May I ask a question here? We were talking about the possibility of having these invoked by government. What went through my mind at that stage is the earlier part of your presentation when the policy was to control the dust levels where the problem occurs. I visualize that as being a workman or two working on something that is not working properly any more and the first person to know about it might be the guy who is using the tool. What happens if that's true? Can he require somebody to take a measurement?

20 He is the first one that sees that something has gone wrong...

25 THE WITNESS: Yes, certainly under our regulations that is the case. A worker at any point in time has the right to identify a particular activity that he considers hazardous, and can contact the Occupational Safety and Health Administration.

DR. MUSTARD: Does he have the right to refuse work he considers to be hazardous?

THE WITNESS: Under the regulations? I don't remember reading anything in the regulations that indicates that.

30 MR. STARKMAN: Q. I'm still interested in dealing with this question of the enforcement of the regulations. You said that, I guess, a financial penalty is not necessary to enforce

Q. (cont'd.) the regulations because the companies and individual corporations would...

5 THE WITNESS: A. I said on the first time around.

Q. On the first time around. But they don't even report it, at this point in time, to anybody, that they have violated the regulations. How would the government agency find out that the regulation had been violated if it's not reported to the unions or to the workplace or to the government?

10 A. I guess we are...I think we are conversing on different subjects here. I feel very strongly that, in my experience, under today's conditions the corporations are willing to take a responsible approach to resolving these problems, and you seem to feel very strongly that somebody else, a third party, has to come in here, besides the worker and the employer, and enforce something. I just don't think, as I say, that...in my
15 experience looking at work sites and taking a look at this construction industry problem as a prime example...I just don't see the program working.

20 Q. Well, the thrust of what I'm saying is that when you answered the question earlier that was being asked about the monitoring of the initial equipment as opposed to the dust collectors, you said something like...well, given that there is a finite amount of money to control dust in the plant, that was the question. The question was about the ventilation system, and you said there is a finite amount of money.

25 A. I said IF there is a finite amount.

Q. Well, there is a finite amount of money. We can agree on that. In any individual corporation there is a finite amount of money, and they want to make the maximum...they want to maximize the profits.

30 A. Right.

Q. So they want to put...if they are going to

Q. (cont'd.) maximize their profits, the less money they have to put into controlling the environment in the plant, the better.

A. I don't put profit incentive in that same category, I'm sorry.

Q. You don't, but you would admit that there might be people who would?

A. I would have to admit that.

Q. But you still don't think that you need any financial or other incentives for corporations in this day and age to meet their statutory obligations?

A. I don't think it goes to accomplishing the goal of resolving the problem any quicker.

DR. MUSTARD: I'm a bit confused. Is there not some liability to a corporation in the United States that exceeds the standard? Does it not openly have to show its records to somebody and be subject to some kind of disciplinary fine?

THE WITNESS: No.

DR. MUSTARD: I'm left with the impression that it's kind of open-ended.

MR. STARKMAN: All right. Maybe we'll get into that. I was coming to that.

MR. STARKMAN: Q. When the inspectors come to the plant, do they review the records?

THE WITNESS: A. Yes.

Q. When they see that it has been...that they exceeded the standard, what happens?

A. They can go out and monitor the site.

Q. But if they only come four times in ten years, they might come two years after that particular thing has taken place?

A. I can give you an example. It has been my

5 A. (cont'd.) experience within Johns-Manville
that this is when they visited our sites. Maybe I'm just misleading
the Commission.

I don't know. There may be other industries where
they visit regularly.

10 Q. Let's assume they come once a month and on a
very regular basis, so they come and they find the standard has
been violated, but it happened a week ago. What would happen
then? They would go out and they would monitor and they would
find out that on that particular day when they monitored it is
not over the standard, is that what you are saying?

15 A. They have two choices. That's one choice.
The other, they may find that it is still above the standard and
they may ask the...number one, they may ask the manufacturer what
programs he has planned to correct that. Secondly, if he is not
providing proper personal protection for that worker, then he is,
under our current regulations, they are liable for some type of
financial...some type of fine or something.

20 Q. That's for not providing the personal
protection?

A. For not providing the protection, right,
for the worker.

25 Q. But as far as you know, is there any penalty,
monetary or otherwise, which can be imposed on an employer,
manufacturer, for violation of a standard?

A. Yes.

Q. What is that?

A. What is the penalty in the United States?

Q. Yes.

30 A. I don't know. It varies. I don't know what
the limit is.

Q. But you believe there is a penalty in the

Q. (cont'd.) regulations?

5 A. There is, I think as I understand the regulations, there is room for a penalty to be assessed. That is one of the alternatives left to the inspector.

10 Q. I wanted to ask you, when you were going through the list of products made from asbestos there were two products that you mentioned to me, that you didn't mention, and one is asbestos clothing, asbestos gloves at least, but also asbestos clothing. Do you have any comments on that similar to the comments you made on the other products?

15 A. Asbestos clothing and asbestos textiles represent a very small percentage of the products using asbestos, in the marketplace today. There are some products out there. The current asbestos textiles that I'm familiar with are treated with some type of coating to eliminate the release of dust. The asbestos textile and clothing area, though, is one area where a number of substitutes have been put into place.

20 I could say one of the major reasons for that is that they are used under some very severe conditions and that cost is less of a factor when you look at the alternatives to the man who has to wear the protective clothing.

Q. What about asbestos...I understand asbestos is used in the welding process, flux or in the welding rods?

25 A. Very little, if any, anymore, based on the numbers that I have seen.

Q. You don't know...you think there is a little asbestos used in those?

A. I really don't know.

Q. You don't know.

30 I wanted to ask, deal with the question of compensation for injured workers. I guess, talking about Johns-Manville, they have annual medical checkups as you have already

Q. (cont'd.) mentioned, and lung function tests as well?

A. Yes.

Q. When it becomes apparent that someone's health is deteriorating or has deteriorated since their previous test, what actions are taken by Johns-Manville in those circumstances?

A. The man is advised of his problem. Beyond that I am not involved with the day-to-day enforcement of the medical program and I don't know what else. I would assume they use also data that would place where he may have received his exposure.

Q. You have no involvement?

A. No, I do not.

Q. Do you have any knowledge of compensation schemes that are available to someone in that...?

A. No.

Q. Who is the new vice-president in charge of health at Johns-Manville, after Dr. Kotin's resignation?

A. We are still looking for a man of Dr. Kotin's caliber to replace him. The man administering the department is a gentleman by the name of Bill Reitz, who is the senior environmental scientist, I guess is the title. He is an industrial hygienist. Plus he has a toxicology background, too, I think.

MR. STARKMAN: I have no further questions.

DR. DUPRE: Mr. McCombie or Miss Jolley?

MR. McCOMBIE: Yes, I've got several questions here.

CROSS-EXAMINATION BY MR. McCOMBIE

Q. The first thing I would like to get at is just one very small item that you mentioned in your presentation, and just a bit of clarification on this and then I would like to look at some general things. That was, you indicated that there

5 Q. (cont'd.) was a period over the last...I think it was twenty years...where you indicated that what you call the friable asbestos was by and large removed, and with a couple of exceptions. You noted the example of drywall joint cement as one of those products where asbestos has been replaced as a component, is that correct?

A. Yes.

10 Q. When would that have been, where the drywall joint cement was made essentially asbestos-free?

A. I would say over a period of years, starting in 1973 or 1974.

Q. Okay, thank you.

15 A. Those products, incidentally, I don't know what people...I've heard a lot of comments and I've seen a lot of data....drywall joint cements contain probably three to five percent asbestos.

Q. Currently?

A. No, they did at that time.

Q. They did at that time.

20 Okay. Thank you for clarifying that.

Now, the A.I.A., Mr. Starkman asked several questions about the A.I.A. itself, and unfortunately I am not that familiar with the A.I.A. so I would like to explore that a little bit further.

25 Now, you say that there is a board of directors that I believe is made up of six people, is that correct?

A. Yes.

Q. Now, presumably there is a staff, also, that are paid directly out of the A.I.A. budget, is that correct?

A. Yes.

30 Q. How large would that staff be?

A. There is an executive director and an assistant.

Q. So that's two?

A. Yes.

Q. And that would be the only staff?

A. Then they have a secretarial...

Q. Then secretarial.

Would you also, you as the A.I.A. now, at any time contract out any kind of research work or anything like that, or hire someone on a contract basis?

A. Yes, we have done that frequently over the years. We have engaged the services of a medical consultant and have had a retainer with a medical consultant. We have also engaged the services of legal counsel where necessary...the Association has from time to time had to defend itself in some of the litigation going on in the United States.

Q. So the Association itself has been...

A. Has been named in the litigation. I'm not sure if you are familiar with the system down there, but you have a very good chance, if you have asbestos in your name, of having to answer to a court.

Q. Okay. Can you give us some idea of when the A.I.A. was first set up and why it was set up?

A. The A.I.A. was first set up in December of 1970...1969 or 1970, in that period of time. It was at that period of time that there was a lot of publicity about asbestos, the hazards associated with asbestos, and the Asbestos Information Association...there was a movement at that time to...well, the Occupational Safety and Health Act had just been passed and an emergency temporary standard right after that was being set up for asbestos, and the Association was set up at first to respond to that regulatory-making process, and out of that came a program to educate the industry on what that regulatory-making process required of the asbestos industry.

A. (cont'd.) Dissemination of information, for instance, involved the regulations that exist in the United States.

5 Q. Well, in that case would it be fair to say that at its origin, if you like, the A.I.A. was more or less in response to outside influence...whether that's government or public publicity or whatever...but you see that the role of the A.I.A. has changed into more of an aggressive, trying to get information across? Is that a fair...?

10 A. It came about as an informational organization and this sharing of information also included sharing it with the regulatory agencies and participation in the regulatory process.

15 Q. But it seems that it was tied in with the bringing in of the Occupational Safety and Health Administration and various stories going around at that time about asbestos.

In other words, if that hadn't been going on at that time, would we have seen the birth of an A.I.A. at that time?

A. It's a very good question.

Q. Do you have a good answer?

A. No, probably not.

20 Q. So, in other words...

A. If nothing had been said about asbestos, if there were never any publicity about the health hazards associated with it, nothing had gone on, would there have been an Asbestos Information Association? I really can't answer that question. I was not there. I did not sit in on the meeting of the original
25 eight people who met.

Q. It was just a small group that first started the A.I.A.?

A. Yes, there were eight companies that got together and formed the organization.

30 Q. Would Johns-Manville have been one of those?

A. They were.

5 Q. Okay. Now, you have testified that, in very rough terms, the extent of where the budget goes, of the A.I.A. You have indicated that about a third, roughly about a third of the budget goes to responses to regulatory agencies of various kinds, is that correct?

10 A. No, I think that's a little bit high. I'm not sure. I tried to put those two together - educational programs and including responses and interaction with regulatory agencies.

15 Q. So that in total would constitute a third of the budget?

A. That probably accounts for, yes, close to that.

20 Q. Then, apart from operating expenses and overhead and whatnot, the rest of the money would go on printing and distribution and things of that nature?

25 A. No, I've had a chance to think since Mr. Starkman was first...we engage a medical consultant and that accounts for a couple of percent of the budget. We are members of the Asbestos International Association, which is funded by all the national associations, and there is roughly seven or eight percent of the budget that goes into that particular area.

30 Q. I'm glad you brought that up. It was something I wanted to get into and you've given me a handy lead into it.

You mentioned it earlier, I think it's again the A.I.A....the Asbestos International Agency, is that correct?

35 A. Association.

Q. Association. So you are saying this is made up of various national groups?

A. Right.

40 Q. And you are saying that the Asbestos Information Association of North America is one of those national groups.

Now, what exactly, would this international group be carrying on similar functions, roughly, to what...

5 A. The international association has tried to bring, has tried to do somewhat the same program on an international basis, but they have gone a few steps further since there are a lot of countries in the world where there are no standards for asbestos yet, yet some of the companies who are members of the various national associations operate there. They may run their operations in compliance with the standards that they have set for their corporation, but there may be a local firm in 10 an area where there is no standard and they may not have any standards at all.

15 Being aware of the situations in countries in more developed parts of the world, rather than have the same problems created in these developing areas, the international association, for instance, has taken it upon itself to set an international standard. That is, set up as a guideline for its members and in fact as far as a guideline around the world.

20 Q. Would it be safe to say that there is a certain amount of consensus within the international agency, that is that you, as a North American agency, wouldn't be bickering or at least not ultimately bickering with the German agency or the British agency, but you would all come together and reach a consensus on various standards and programs?

A. Yes, I would say so, for the most part.

25 Q. So this is hashed out within the international and then a united front is presented?

A. Right.

30 Q. You brought up the question of Third World countries. How many of what I guess we can generally call Third World countries, underdeveloped countries, how many of those would be represented in the international association, or are we just talking about western industrialized countries that are part of the international?

A. I think there are four or five. Off the top of my head I can name India, Mexico, Nigeria...

DR. DUPRE: Not Taiwan?

THE WITNESS: Not Taiwan?

DR. DUPRE: I'm asking you. Is Taiwan in the International?

THE WITNESS: Not that I know of, no. I don't know if Taiwan has an association, but Japan is a member. I don't consider Japan as a developing country, obviously.

MR. McCOMBIE: Q. As you indicated, there are certain companies that have operations in various parts of the world, and I'm just curious, for example, whether...well, maybe you can tell us right now, to switch hats for a minute, in your capacity as information...asbestos information officer on policy for Johns-Manville...how many countries in the world Johns-Manville operates in?

THE WITNESS: A. How many countries we operate in?

Q. Yes.

A. I think fifty-six.

Q. Fifty-six?

A. That's the number that sticks in my mind. Maybe that's a little bit high.

Q. Okay. Well, let's...

A. Just let me add to that. We only operate asbestos-using facilities in three.

Q. In how many?

A. Three.

Q. Three. That's as of when?

A. Well, actually we only operate in two. The third one we have a very minor interest in.

As of when? That's probably as of the early nineteen-sixties.

Q. So that there is no...

A. We have not operated asbestos manufacturing facilities in very many other parts of the world. It has been confined to North America.

Q. I find that somewhat surprising, frankly. I have in front of me a directory of American firms operating in foreign countries, dated 1979, and from that book there is various countries listed and Johns-Manville's operations there, and it would appear to me that there's certainly more than three - Colombia, South America. Do you operate in Colombia, South America?

A. Not an asbestos-using facility.

Q. Well, this reads, "Johns-Manville International Corporation", and it's called, Enternit Pacifico, S.A., and in brackets it says, "manufacturing of asbestos products". So this is incorrect information, is it?

A. Yes. We do not own, as far as I know...we had a very small ownership, I think, at one time, of two or three percent, or four percent.

Q. And in Costa Rica? Do you have any operations in Costa Rica?

A. Not that I'm aware of.

Q. So you are not aware of...and again I apologize for my Spanish pronunciation...Ricolite (phonetic) S.A., in San Jose, Costa Rica? You are not aware of that company?

A. No.

Q. Again, in...

A. There may be some minority stock ownerships in those that I'm not aware of. As I say, it's two or three or four percent. I know some of those situations existed, but we do not operate any of those facilities. They are owned by the Enternit Group, and that is why they share that name.

Q. They are owned by whom?

A. The Enternit Group, which is a Belgian

A. (cont'd.) holding company.

Q. A Belgian holding company?

5 A. Yes. Well, there are two, I guess. There is a Belgian holding company and another one, a German or a Swiss company.

10 Q. So you can't illuminate for me why this publication, which is by Uniworld Business Publications Inc., New York, New York, would list Johns-Manville as operating these various operations?

15 A. I couldn't answer that at all. I could see if they said we had some stock ownership in there, and I cannot answer you factually as to whether we do or not. As far as operating any of those facilities, that I can assure you we do not do, and have not done ever.

20 Q. I see. Okay, well the three that you do say, or two, I believe you said?

25 A. The two that we operate are...we operate a facility in Mexico, we operate a group of companies in Mexico. We are minority owners, but we are managers. I'm not even...we are not even managers anymore, I think I can safely say.

30 We do fully operate a subsidiary in Belgium.

Q. Well, let's deal with Mexico for a minute, and if you are not managers now, let's deal with when you were managers. What I'm trying to get at is the kind of policies that we have discussed here today and another employee of Johns-Manville was discussing before during this hearing. Are those the kinds of policies that you would see applied in your overseas operations?

35 A. We currently apply the same policies that we apply in the United States, to our overseas operations, yes... either meeting the country's standards if they are stricter, or meeting standards.

40 Q. So in other words, the minimum standard is set in head office in Denver, and then it is adjusted if it's stricter

Q. (cont'd.) in, say Canada or Mexico?

A. Right.

5 Q. I see. So hopefully, then, one would assume that in a lot of these underdeveloped countries where I think you indicated that the kind of standard-setting for health and safety, occupational health and safety, may not be as strict as in the United States or Canada, then Johns-Manville, either as a manager or as a minority shareholder, would attempt to bring that expertise
10 and experience and protection to the workers in those countries, is that correct?

A. To our own facilities, we would very much do that. We would also try to bring it, and we have tried to bring it, as an asbestos supplier, to the other facilities.

15 DR. DUPRE: Counsel, may I ask whether Mr. McCombie and Miss Jolley were made aware of our adjournment, which is supposed to be six o'clock, which leaves a couple of minutes?

MR. LASKIN: I believe, Mr. Chairman, I indicated to everybody that we had a problem sitting beyond six o'clock
20 this evening. I do not know what the witness's plans are.

DR. DUPRE: Are you getting close to where you wish to be, Mr. McCombie?

MR. MCCOMBIE: Well, I wouldn't want to speak on behalf of Miss Jolley. I'm sure she has some questions that she would like to put to the witness, too.

25 It's now almost six o'clock. I have several more questions that I would like to deal with. I leave it up to the Commission as to how they want to deal with it.

MR. LASKIN: Can we continue tomorrow morning?

THE WITNESS: That's fine with me.

30 DR. DUPRE: Is that possible, Mr. Reis? Well, then may I suggest that...

THE WITNESS: I have no objection.

MR. McCOMBIE: It gives us a reason for coming back tomorrow.

5 DR. DUPRE: We should...we have, of course, a major reason for coming back tomorrow, Mr. Reis, which I will deal with on schedule at ten o'clock.

THE WITNESS: Okay.

10 DR. DUPRE: But if you would be so kind...and may I ask this of Mr. McCombie and Miss Jolley, if we resume at nine, do you anticipate that your questions would have taken us to nine-thirty or quarter to ten, or something like that?

MR. McCOMBIE: On behalf of myself, I would anticipate maybe another fifteen or twenty minutes.

DR. DUPRE: Miss Jolley?

15 MISS JOLLEY: I have very few, since so many have been covered. I think I have one or two questions.

DR. DUPRE: The Commissioners, of course, will have possibly a few questions.

20 On the understanding that we can finish up by ten o'clock or before, may we invite you back at nine o'clock tomorrow morning to complete this testimony?

THE WITNESS: Yes, I am up here to complete this.

DR. DUPRE: Fine.

25 THE WITNESS: Can I make one comment? I see I have been corrected here. I don't know where the number came from. I was counting those quickly. We have operations in about twenty foreign countries. Fifty seemed high to me. I just pulled that out of the top of my head. It's the 10K report.

DR. MUSTARD: Yes, I was going to read into the record, this is the Securities and Exchange Commission report of Johns-Manville, form 10K, for December 31, 1980.

MR. HARDY: It's accurate, Dr. Mustard.

30 THE WITNESS: Yes.

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DR. DUPRE: We'll reconvene, then, at nine o'clock tomorrow morning.

THE INQUIRY ADJOURNED

....to page 110

THE FOREGOING WAS PREPARED
FROM THE TAPED RECORDINGS
OF THE INQUIRY PROCEEDINGS

Edwina Macht
EDWINA MACHT

180 Dundas Street
Toronto, Ontario
Friday,
February 19, 1982

THE FURTHER PROCEEDINGS OF THIS INQUIRY
RESUMED PURSUANT TO ADJOURNMENT

APPEARANCES AS HERETOFORE NOTED

DR. DUPRE: Good morning.

Mr. Reis, may I ask you to please resume your
place?

JAMES REIS, PREVIOUSLY SWORN, RESUMES THE WITNESS STAND

DR. DUPRE: Mr. McCombie, are you ready to resume
your questioning?

MR. MCCOMBIE: Yes. If I get a little organized
here, I think I'm ready.

CROSS-EXAMINATION BY MR. MCCOMBIE, CONTINUED

Q. When we adjourned yesterday, Mr. Reis, we
were talking about the asbestos industry outside of North
America, and Johns-Manville involvement.

You indicated then that to your knowledge there
was only two plants outside of North America where asbestos
was produced under Johns-Manville, is that correct? That was
in Mexico and Belgium, I believe?

A. Right.

Q. Okay. Now, could you...

A. Actually, there are two separate plants in
Belgium.

Q. Two separate plants? Okay.

Could you give us some idea, other than ownership or control would Johns-Manville be involved in technical assistance, engineering specifications, material supplies, that sort of thing, to Third World asbestos manufacturers?

A. We have done that in the past, over the years, yes. I would say the expansion of the asbestos industry around the world has involved the supply of technology from probably a dozen major corporations from different parts of the world.

Q. Under those kind of conditions would the same kind of policy that we were discussing yesterday hold - that is, that you would certainly put moral pressure or whatever on the recipient companies to uphold the kind of policies on exposure that we were talking about yesterday?

A. The designs and facilities that are sold to them include control of...the handling and control of asbestos and asbestos dust, yes.

Q. Okay. Do you know of a plant in India known as Shree Digvijay, which is a cement company in India?

A. Yes.

Q. According to an article that I have here, from New Scientist magazine, from Britain, dated February 26, 1981, it states that, quote:

"The factory is almost twenty years old and the American asbestos corporation, Johns-Manville, helped build it".

Is that information correct?

A. We did not help build it. We sold them the technology and the design of the facility - parts of the facility.

Q. I see. But in selling them that expertise, again, you would hold to the policy and again in the article a policy is quoted. Maybe I could just read it and see if this is still the policy of Johns-Manville.

Q. (cont'd.) I apologize if I get a word or two wrong, but the photocopies didn't go all the way over, so I may be missing a word or two here.

Anyway, it quotes Johns-Manville's policy as the following, quote:

"We reserve the right to refuse asbestos fiber to customers who do not meet applicable government regulation on asbestos exposure, and therefore endanger the health of their employees and expose Johns-Manville to unwarranted liability. In those countries where there are no government regulations on asbestos exposure, accepted industrial hygiene practice shall apply". End quote.

I gather that's the policy?

A. That's basically correct. Without having a copy in front of me, I...

Q. Okay. Now, this particular plant, according to this article, it would seem that that kind of exposure control is certainly nonexistent. If I could again just indulge the Commission and read a brief excerpt from this, it states that, quote:

"The road to the Shree Digvijay plant was lined on both sides by asbestos-cement waste. A high wall surrounded the factory. Outside, untreated waste water emptied into a trench piled with solid asbestos waste on either side. Solid waste from the plant littered the neighborhood where houses stand. Indeed, some of the houses were made from hunks of asbestos-cement pipes and scraps of corrugated asbestos-cement sheets. Children played on the wastes around their homes."

End quote.

5 Q. (cont'd.) Would Johns-Manville, as the corporation that was responsible in helping to set this up and providing expertise, and according to this also acting as a marketing agent and supplying raw material, would they feel any sort of responsibility to deal with a situation such as outlined here?

10 A. First of all, Johns-Manville is not a marketing agent for that company. Interestingly enough, the New Scientist and the people that wrote the article were told that and they chose to continue to write it...in fact, were provided evidence to that effect and they chose to write it...but beyond that, our fiber does find its way into the Shree Digvijay factory. It is sold to the Indian government which is the buying entity for all companies in India, not the individual corporation. So Johns-Manville as a supplier of asbestos does not have a say whether its fiber
15 sold to India will go into any particular factory.

In the case of Shree Digvijay, we have...we are in the process, and have been for about a year and a half, of working with those people to clean up the plant. We have no management, we have no say in that operation. Although the people indicate that we have a ten percent ownership, there is no participation in the
20 management of that plant and we have a concerted effort...in fact, as of today there are a group of people leaving to go over to Shree Digvijay for the third time to see if they are meeting the timetable to instal the proper dust control that...or to bring back into effect the dust control that was in that plant.

25 They actually had a bag house that was a part of the original installation, that they had just let deteriorate without any maintenance or replacement of the bags within the dust collector.

Q. So I gather that you are familiar with this article that we are talking about?

A. I am very familiar with it, yes.

30 DR. DUPRE: Tell me, is it your intention to enter that article as an exhibit...?

MR. McCOMBIE: I certainly can do, if you don't mind a lack of...

DR. DUPRE: It would be entirely proper.

MR. McCOMBIE: Okay.

DR. DUPRE: Could you also, please, give the Commission at this time the name of the author of the article?

MR. McCOMBIE: Yes. It's Barry Castleman... C A S T L E M A N...and Barry Castleman is from the United States and has been quite active in the asbestos question.

MR. McCOMBIE: Q. Okay, just one more thing on this article then, and yesterday again we were talking about the Asbestos International Association, and if you are familiar with the article I'm sure you know that the Asbestos International Association is quoted in this article...or the author talks about the Asbestos International Association...by saying that it, quote:

"Issued a memorandum which made it plain that the asbestos companies would accept warning labels piecemeal, country by country, and in countries where public pressure for warning labels was too great to ignore, would lobby for the mildest possible warning", end quote.

Am I to understand that your feeling is that is also incorrect and that there is no such memorandum from the International?

THE WITNESS: A. I can't answer whether there is or isn't. I can talk for Johns-Manville and the other Canadian asbestos producers and members of the Asbestos Information Association in that they label every bag of asbestos that is exported to any part of the world.

Q. Certainly we heard from you a very strong recommendation on the labelling of asbestos products, and there

5 Q. (cont'd.) was quite some discussion about that. You also indicated that the A.I.A. North America is part of this International, and that the International gets together and arrives at some sort of consensus on policies, so this was in 1978, according to this article, but you are unfamiliar with whether or not this is correct or not?

10 I mean, didn't the North American Asbestos Association have any kind of input into...or wouldn't they have had some kind of input into a policy such as this?

A. They most likely would have, and I am not aware of any report that came back from our representative who attends the meetings over there that these discussions went on, and I don't remember seeing any correspondence to that effect either.

15 Q. So there would be one representative from the North American Association, is that correct?

A. There is a representative from every member association in the world. Each one has a representative to the board of directors.

20 Q. Could you tell us who the representative from the North American Association is?

A. It's a gentleman by the name of John Marsh.

Q. John Marsh?

A. Marsh.

Q. Where does John Marsh come from?

A. He is with Raybestos Manhattan.

25 Q. Okay, thank you.

I just have a couple of quick, hopefully, questions.

DR. DUPRE: Before we pass on, Mr. Laskin, do we have a number we can give to the article that has been entered before us by Mr. McCombie?

30 MR. LASKIN: Miss Kahn tells me we can give it exhibit number forty-nine.

DR. DUPRE: Exhibit forty-nine.

EXHIBIT #49: The abovementioned document was
then produced and marked.

MR. HARDY: Have we given a number to Mr. Reis's
slides from yesterday?

MR. LASKIN: All of the material that Mr. Reis
submitted yesterday we have collectively called exhibit forty-eight,
and will make available, of course, to the parties.

MR. McCOMBIE: Q. Just a couple of quick
questions on the asbestos, the North American Association.

I am curious as to whether or not...we have heard
an awful lot about lawsuits that are going in the States, and their
numbers seem to vary to some extent. They are quoted as various
thousands. According to an article in Forbes Magazine, dated
March, 1981, there's over fifteen thousand individual claims...or
close to fifteen thousand individual claims.

I am wondering if the Asbestos Information
Association as such, and particularly for its smaller members,
would offer any kind of assistance - either medical, technical,
legal or otherwise - to any of its member organizations facing
lawsuits in the States?

THE WITNESS: A. It has provided copies of
medical documents if people have asked for them.

Q. So if I were, say a brake shoe manufacturer,
a very small organization that was working in...you know, in the
United States...and was sued, and I turned to the A.I.A. as a
member of A.I.A., they wouldn't provide me with that kind of
assistance other than...

A. Not legal defence, no.

Q. I see.

I guess one final question, and this is more
out of curiosity than anything else, just before the last

5 Q. (cont'd.) American election I understand there was a bill in the American Congress, which was put forward by Senator Schweiker, dealing with OSHA, and I am wondering whether or not the A.I.A. had any representations in supporting that bill, or not?

A. We did not have any representation supporting that bill, to my knowledge. I am not even...I think I know the bill you are talking about.

10 Q. As I understand, it was a bill to...I will try not to use loaded words...but to change the policies of OSHA insofar as inspection and deal, presumably...

A. That's as I remember it, too. I remember some descriptions using more vivid wording than that.

Q. But A.I.A. didn't have any input in that?

15 A. We are not a lobbying organization.

Q. You are not a lobbying organization? You don't consider yourself a lobbying organization?

20 A. Under...and Tim, you can correct me if I'm wrong... under past tax laws, an organization that lobbied had to have a different tax status and we never chose to be in that position. This is under U.S. law.

Therefore, we have had to be sure that we didn't do anything in the lobbying area, or that would have changed our tax status.

25 MR. HARDY: Just to clarify, when we talk about lobbying in the United States we are talking about contact with legislators in Congress and would not include in that term contact with administrators in administrative agencies.

A.I.A. has a number of contacts on an ongoing basis with OSHA and EPA and other administrative agencies. That's not considered lobbying.

30 On the other hand. A.I.A. does not get involved in working with senators and congressmen and their staff to try to

MR. HARDY: (cont'd.) promote legislation. That's what we mean by not being a lobbying organization.

DR. DUPRE: As a sometime-professor of American government, that answer gets an A-plus.

MR. HARDY: Thank you.

DR. DUPRE: It's entirely correct.

MR. McCOMBIE: Unfortunately, the semantic distinction between the American term of lobbying and what I perceive, or I guess what the public perception of lobbying is, is perhaps beyond me.

I mean, my feeling...and you can correct me if I'm wrong...is that your appearance here today, I mean I would consider that, in part, lobbying, and your submissions to the Minister of Labour on the asbestos standard, you don't consider that lobbying?

THE WITNESS: A. No, I don't. I consider it participating in part of the educational process.

Q. Okay, well...

DR. DUPRE: Again, Mr. McCombie, if you will permit me to wax professorial for a moment, you will want to bear in mind that given the different constitutional relationship between executive and legislative processes in this country, of course approaches to any executive agencies, if one were to apply the American definition, would not be lobbying.

What is defined as lobbying, of course, in Canada can be defined differently, in part because of the difference in constitutional systems.

MR. McCOMBIE: Okay. Well, I'll take that under advisement.

MR. LASKIN: Well, I should say, Mr. Chairman, as a former student of the chairman, I didn't know that anyone ever got an A-plus.

DR. DUPRE: I'm getting more generous as I get older.

MR. McCOMBIE: Okay, I have no further questions.

Thank you.

DR. DUPRE: Thank you.

Miss Jolley?

CROSS-EXAMINATION BY MISS JOLLEY

Q. Yes. I would like to deal with your brochures, because we were having a conversation about the possibility of the Federation distributing these to our members.

A. Okay.

Q. I wonder who developed these brochures. When I looked in the older ones...and this is the newer one, unfortunately I don't have the older one...but it was called some kind of a technical committee of the A.I.A.?

A. Yes.

Q. Who is on the technical committee?

A. The head of the technical committee at that time was a gentleman by the name of Ed Fenner, who was the director of environmental services for Johns-Manville, and there were seven or eight other member corporation representatives on the technical committee.

Q. And they were just corporate representation on that?

A. Yes.

Q. There was no labour input to the development of any of this material?

A. I can't answer that for sure because...you are holding up the asbestos-cement pipe one.

Q. I'm sorry. The A-C...?

A. Yes. Actually, that was done by the asbestos-cement pipe industry, and it was done with some ...that particular one was done with the involvement of public utility personnel and whether it got into their workers or not, I really don't know.

Q. Well, they usually say if they involve labour, because they want to say that when they want to distribute it.

5 A. Yes. I think I can...it did not involve an approach to, let's say, an organized labour group and their health and safety committee. That I'm almost positive of.

Q. Right.

A. Individual labour might have gotten involved, but...

10 Q. I think that at this point I would just like to distribute from this...I know it's actually...it's with the Commission already, but just for the sake that everybody is clear about what I'm dealing with...one of the problems that labour has when industry distributes materials on health effects, and therefore work practices, is the portrayal of risk. I would like to deal
15 with page three, which is the second page that I distributed, and in reading through this, the only betrayal of risk that I could find was the first statement, and it says:

"As you are aware, airborne asbestos fiber has been identified as a possible health hazard"...
20 and then it goes on:

"...that there are few things that are zero risk, etc.,"...and tells us all about all the other harmful things we are exposed to.

But is this a fair portrayal of the risks of asbestos to workers, to persuade them to use proper work practices,
25 do you think?

A. I think this brochure should be used...and in fact it is used...in conjunction with other brochures, which include discussions of the health problems. One of the problems that you have in putting together any kind of a piece of literature is, you can go into the entire discussion of this whole subject
30 and you can make the brochure so burdensome that nobody is going

A. (cont'd.) to read it.

5 Q. But I think it would be fair to say, is it not, that workers are more likely to follow work practices, etc., when they are fully familiar with the risks that they are exposed to?

A. I would certainly assume that that would be an important point, that they understand the risks, and that would be one of the incentives from their own personal viewpoint.

Q. Why is it...

10 DR. DUPRE: Let's take that one step further. Would it not be reasonable, perhaps, to even deliberately exaggerate the risks if the objective of the health program is indeed to try to disseminate the implementation of proper work practices as much as possible?

15 THE WITNESS: My own personal opinion of that is, no, I don't think it helps to deliberately exaggerate, because then if you are talking about people who live with certain risks and understand those risks, and to exaggerate them dilutes the effectiveness of the brochure.

20 DR. DUPRE: I take that opinion. Thank you, Mr. Reis.

Please continue.

MISS JOLLEY: Q. Could you tell us why the other occupational health and safety agencies in the U.S. refuse to distribute these?

25 THE WITNESS: A. Interestingly enough, I asked myself the same question. We are in the process now, Johns-Manville is, of some of our people are out meeting with the various regional offices of the Occupational Safety and Health Administration and the Environmental Protection Agency, and the brochures which have been submitted to the main offices in Washington have never been...no one has ever been alerted to the fact in the field
30 offices that these are available, and in fact the field offices

A. (cont'd.) have said to us, gee, boy, we could have used these a long time ago.

5 Q. On the other hand, OSHA is also giving a lot of money to trade unions to educate their members in health and safety.

10 A. Oh, I'm not saying that they aren't doing anything either. There have been programs developed by trade unions, as far as educational programs. I have seen video tapes put on by the Painters and Allied Trades. I have seen a presentation put together by the Oil, Chemical and Atomic Workers, and there are a number of other presentations, I assume, out in the field.

Q. Right. That's true in Ontario as well.

15 I think our concern is that when there is no labour input into these kinds of documents, and that we don't feel that they actually portray the real risk, that we don't like to distribute that kind of thing.

20 A. The problem I have with the two programs that I have seen, though, is all that they talk about is risk and they never tell the worker what to do and how to avoid the risk.

25 They tell him how to contact the Ministry of Labour, they tell him how to contact the OSHA to bring an inspector in. They don't tell him what to do to avoid that risk, and so that... you know, neither side is perfect, I don't think, and I would hope that both sides working together, which is the way that you are suggesting, would go a long way to resolving problems.

Q. I would like to move on to another area of questioning that Mr. Starkman raised yesterday, and that was the whole issue of self-regulation of the industry.

30 We, as a matter of fact, in Ontario, had another Royal Commission that investigated self-regulation in the mining industry, in 1974, the Ham Commission.

5 Q. (cont'd.) I assume that that's the suggestion you were making yesterday, that industry ought to regulate themselves, in a sense, that they adhere to the standards and that where there is a problem they would lower the levels or take action?

10 A. And I would foresee it going even further. Our Occupational Safety and Health Administration in the United States is talking about something that I think the chairman brought up, or one of the commissioners brought up yesterday, and this is a joint effort - groups of labour and management overseeing these programs.

15 Q. That's certainly the tactic we are taking in Ontario.

A. Yes.

20 Q. I wonder, you raised with Mr. McCombie the whole issue of the fact that if there are no regulations you would apply your internal regulations, in another country. However, if there were more stringent regulations, you would certainly apply the regulations of the jurisdiction in which you were operating, is that correct?

A. Yes.

25 Q. How long has that been a policy of J-M?

A. I don't have any idea. Certainly since my involvement.

30 Q. How long has your involvement been?

A. Directly in this particular area, probably since the early nineteen-seventies.

35 Q. Early seventies? Right. And that was the policy then, was it?

A. Yes.

40 Q. Do you know when Ontario moved to a two fiber standard or a two fiber guideline?

A. No.

45 Q. In 1972.

When did the U.S. move to a two fiber standard?

A. In July of 1976.

5 Q. I would like to distribute now some readings from...and they are historical, I grant it...but there's some readings from a Johns-Manville mine in Ontario, from 1974. I would like to just pursue that a little bit.

I want to pursue this because it speaks to self-regulation.

10 These readings are taken from the Ministry of Natural Resources files, Occupational Health and Safety files. Mr. McCrodan from the Ministry of Labour was good enough to provide them to me in 1975/76.

It deals with the Reeves Mine, which was a mine in northern Ontario, near Timmins, is that correct?

15 A. Yes.

Q. Do you know of the Reeves Mine?

A. I am aware of it, yes.

Q. And it was a Johns-Manville mine?

A. Yes.

20 Q. And the Jeffrey Industrial Hygiene Laboratory is a J-M laboratory in Quebec?

A. Right.

Q. So these are taken by J-M.

25 I wonder if we could just look at some of the levels, and as well as the asbestos there were noise readings, but we aren't dealing with noise, so...but I think on page three you have levels of twenty-five, seventy-five, some below, twenty-three, eighteen, eight, nine, seventy-four, thirty-four, twenty-five, twenty-nine, nineteen.

30 Page four, at the bottom, there is a level of two hundred and twenty-five fibers per cubic centimeter, and I just wonder how that speaks to self-regulation?

A. Are you aware when this mine shut down?

Q. Yes, I am.

A. What date was that, do you remember?

Q. It was in 1975.

A. Yes. I think it was early in 1975. I was just trying to...maybe as late as May of 1975, and prior to that it had shut down once before.

At the same time, in 1975, all of our competitors were on strike in Quebec, and we had had, as I mentioned yesterday, a major slide at our operation at Jeffrey, severely curtailing our ability to produce fiber.

This particular situation lasted through 1975, into 1976. However, right in the middle of it we still chose to shut down an operation, the Reeves Mine. The reason for shutting it down was that after these types of reports came out for a couple of months...and this mine, I think, opened, the mill restarted in 1974...it ran for six months and the conclusion was that it could not be operated within the standards. Even in a market situation where every last ounce of the product would be sold, the decision was made to close the mine down.

I can't...

Q. I do have the readings from years before this, going back into the late-sixties...

A. Yes.

Q. ...where the readings were the same.

A. I am not aware of that...

Q. I can make those available to the Commission.

A. That particular situation predates me, but as far as this situation, the mine was opened and immediately...well, not immediately, everyone can redefine it...within less than nine months the mine was shut down again because the management of the corporation did not feel that it could provide the working conditions that we were obligated to provide.

Q. Right.

5 Could we look at the letter at the end, and given that the policy in 1974, of Johns-Manville, was that in fact they should adhere to more stringent guidelines in other jurisdictions, I wonder if we could look in the middle of the third paragraph... and this letter is from a Mr. VanDerbeek, who was a senior vice-president, at that time, of Johns-Manville?

A. Yes.

10 Q. He suggests that "when the Government of Ontario decide to consider a two fiber regulation, we became discouraged."

I don't know why they are talking about moving to a two fiber standard in 1975.

A. I don't either.

15 Q. We had it for three years, and I worry about your policy in terms of that kind of letters that come out of Denver.

A. Yes.

Q. I just...the other thing I would like to know is, how long has it been a policy of J-M to provide readings to workers?

20 A. I think it goes back to 1972 and the original standard.

Q. Right. And that would be true for the other jurisdictions?

A. That I can't answer.

25 Q. Do you know if the workers ever received these readings at Jeffrey Mine?

A. I do not know.

Q. Or at the Reeves Mine?

A. That's something I do not know.

30 Q. The steel workers never saw these readings in 1974/75.

A. Yeah, if you know that they did not, I have to take your word for it.

5 Q. I wonder what the corporate responsibility is to the workers who went through this mine? There are eight hundred to twelve hundred workers, former J-M employees, and I wonder what you consider that your responsibility is to those workers now?

A. I think I would have to say the responsibility is our obligations under the Ontario Workmen's Compensation system, if there is a health problem with any of those workers.

10 MISS JOLLEY: Thank you very much.

DR. DUPRE: Commissioners' questions? Dr. Uffen?

DR. UFFEN: Just a quick one to follow up on the question that was raised yesterday about research.

15 At the time it was raised, in your capacity as a member of the Association, could I ask you also to turn your hat around now to the J-M hat, and could you give me some idea of the amount of money that your corporation would spend on research and development for products, and for the amount of money that would be spent on research in health care of the workers?

20 THE WITNESS: I don't have either one of those numbers in my mind. In our annual report we talk about the total dollars. I cannot break out of that what is spent...you are talking about just on asbestos fiber, or asbestos products?

DR. UFFEN: I am particularly interested in the amount of research you might do, and the money spent, on the health care aspect of exposure to asbestos.

25 THE WITNESS: I don't have that figure available.

DR. UFFEN: Would you be able to get it for us?

THE WITNESS: I certainly can.

30 DR. UFFEN: I would also be interested, even without the actual figures, as to the procedures you would use. Would it be by research contract, would it be by research grants to existing medical agencies like universities and so on, or would it be by contribution to other associations which might be doing that

DR. UFFEN: (cont'd.) kind of research? Have you any...?

5 THE WITNESS: Yes, I am aware of that. Our policy involves, I think, virtually everything that you describe, or our programs involve everything that you describe. Going back to the early days, we funded programs at the Trudeau Institute in Saranack Lake, and these were funded by the asbestos industry, which Johns-Manville was a part of, a significant amount of funding, 10 and I don't know the dollar value, but has been funded by the Quebec Asbestos Mining Association...or actually through an organization called the Institute for Occupational Environmental Health, IOEH, which is funded by all of the Canadian asbestos producers. More recently with the situation in Quebec, there is 15 an organization called IRDA which all of the...I think you are aware of...and all of the asbestos producers in Quebec contribute to that on a contractual basis.

Johns-Manville as a corporation has, over the years, funded studies at a number of health care facilities, including Mount Sinai. We were major contributors to the original programs 20 that Dr. Selikoff undertook after publishing his study in...his educational programs and the extension of his original studies of the insulation workers.

We have funded other programs at Mount Sinai since that time. We have funded programs at Tulane University, with Dr. Weill down there, and we have done research work internally, 25 using Health Safety and Environment staff. We have a biostatistician epidemiologist on staff, and have studied our own facilities quite extensively.

DR. UFFEN: One more question. I am not trained in law, and I'm trying to learn the difference between the American situation and ours. I understand that tort liability 30 plays a big role in the United States, perhaps more so than for

DR. UFFEN: (cont'd.) us because we have the Workmen's Compensation Board.

5 Does tort liability include the necessity to do sufficient research work to be informed of the hazards?

THE WITNESS: Does it require it?

MR. HARDY: I'll try to answer that, Dr. Uffen, if you would like.

10 First, let me explain a little bit about where most of the tort suits arise in the United States, which is that they are lawsuits not against the worker's immediate employer, but rather against what are referred to as third parties, which in the case of asbestos would likely be the miner or the manufacturer of an asbestos-containing product which was sold to the employer, and the employee was then exposed on the job.

15 As in Canada, I believe, under Workmen's Compensation systems in place, generally cannot sue their employers under the tort system. Instead, they collect through the Workmen's Compensation system, but there is no similar ban on suing third parties, and that's the reason why there is so many lawsuits in the United States, and I gather the law is somewhat different in Canada, which makes the point why you don't have as many lawsuits, and maybe John could add on that.

20 With respect to research, the general tort principle in the United States is that a manufacturer of a possibly-hazardous product is held to some high standard, sometimes referred to as the standard of an expert, in terms of knowledge about his product and its possible risks.

25 There are, in some cases, references in the decisions of the Court to the fact that the manufacturer should have done some amount of research.

30 Broadly defined, it might well include things like monitoring in order to be aware of to what extent fibers

MR. HARDY: (cont'd.) are released under certain conditions of use.

5 And yes, the answer is that has been an issue in a number of the lawsuits. I don't think that there's a clear principle which would give you any good handle on how much research, how much of an expert you need to be, but there is some solid groundwork in the tort law for giving that responsibility to the manufacturer.

10 THE WITNESS: Then beyond that, when you get into individual jurisdictions within the United States, that whole philosophy of tort litigation even has further liability, has further interpretations to the extent that in some cases in various state jurisdictions it almost becomes a no-fault situation.

DR. DUPRE: Dr. Mustard?

15 DR. MUSTARD: I have a series of questions, and some of them may be coming in on research studies that have been commissioned. I would appreciate your comments now.

20 The first is, has there been an increase or a decrease or has it remained level, in terms of the industry in North America that is engaged in the processing and manufacturing of asbestos products? What is happening to the industry? Is it shrinking, expanding or staying the same size during the seventies?

25 THE WITNESS: During the latter half of the nineteen-seventies, the industry has been shrinking. There has been a very noticeable contraction in the year 1980/81, and there's a question in a lot of peoples' minds of how much of it is because of the economic conditions and how much of it was influenced by specific health concerns and in turn, its influence on users of asbestos.

30 DR. MUSTARD: Do you have any information within your organization as to whether the plants or the companies that tend to go out of business or out of production are new ones

5 DR. MUSTARD: (cont'd.) with sophisticated control systems, or tend to be old ones in which the cost of bringing them up to the new standards is such that it is not worth the investment, so they just close it? Have you any assessment of that, from your records?

10 THE WITNESS: My own...without looking at records, but I would agree with the latter statement, that it tends to be the older plants that are going to be expensive to bring up to standards. The plants, as far as I know, virtually all the plants in the United States meet the two fiber standard.

DR. MUSTARD: That are in business?

THE WITNESS: That are in business, yes. Yet, some of them have closed even though they were within the standard.

15 The health situation, I guess, maybe the better explanation of it is that the health situation is only one part of it. They can meet the standard, but because of their age the overall process may not be as effective and cost-efficient.

20 DR. MUSTARD: As a Commission, you may not be aware but I think some of the others are aware, that we did go to Quebec and look at some of the operations there, and one of the things, as a Commissioner, that one observed is that in the crushing and milling process that the machinery has been developed which I think emphasizes the point that you were making yesterday about the importance of extracting the air through the process.

25 One felt that approach had suitable potential. Obviously it has considerable cost, but obviously, again, I gather from your comments, that's the way things are going and that point control through this process looks, with modern technology, to be something that can even be further enhanced.

30 Indeed, one was impressed that some of the operations had very few workers in the actual...even in the areas where they had the point control systems in.

In the light of that sort of point that you made,

5 DR. MUSTARD: (cont'd.) when new plants are been established...and there may not have been any...but if new plants are being established, do they put very tight controls in the design of those plants to have fiber pulled out at the point of operation and taken out, rather than being pulled out through the atmosphere?

THE WITNESS: Yes, very much so.

10 DR. MUSTARD: That being the case, it poses the problem for me of trying to figure out what your guidelines in the future should be, or your regulatory controls should be for the future.

15 You indicated in your testimony yesterday that there are some plants that are operating at one fiber or less. Would it be unreasonable, therefore, to expect that during the nineteen-eighties or nineteen-nineties that the whole concept of engineering systems, computers, remote control things, and air-handling systems, would it be unreasonable to expect that this would make it possible, in effect, to get a very low level of fiber in manufacturing operations? Would that be a reasonable expectation?

20 THE WITNESS: I don't really agree with that, because it has been our experience that once you get down to this level of close to one fiber that work practices, again, including maintenance of facilities and equipment, become an ever-increasing factor. There are a number of factors that go into, leading to escape of dust - not only just that point-source control, 25 but the entire maintenance of the operation and how the work practices are handled at that station.

30 I think we were explaining yesterday to someone that even when you have point-source control on a manufacturing operation or a fabricating operation, there may be a little bit of dust that escapes there and over a period of time there can tend to be a dust buildup.

5 THE WITNESS: (cont'd.) The easy way to avoid that is to have a program, an enforced program, of a man after his work period vacuum around that area so that the next worker coming in starts with a clean operation.

That doesn't always happen and I don't know, it becomes a work practice and enforcing a program, now, I don't know what other dust control you put on to improve the technology any further than it already is.

10 DR. MUSTARD: Well, I recall seeing two examples of this, and one was an operation, it was the bagging of the fiber, and it was fully automated and controlled by a person remote from the actual process, and the whole thing seemed to be enormously clean, and I could easily conceive...I'm not an
15 engineer, Dr. Uffen, and have daydreams, of course, that's the advantage of being a physician....and if you go to a physician, you know what I mean...that that operation could be enclosed so even traces of fibers could be sucked out if anything escaped during the bagging operation. Now, the sewing of the bag was
20 fully automated and the whole building up of the stuff to be shipped was fully automated, and about the only way you could get much fiber would be somebody ramming a forklift truck into the bags...put the fork into it.

25 In other operations one saw things being done manually and there was spillage of fiber. It seemed to me there that the latter was a work practice case, but the other one was an operation in which modern technology had been put in to further reduce it. So that one can accept that.

30 I would think that...from the testimony yesterday I would interpret it that there has been enormous improvement in point control and this really has brought the fiber level right down. But neither you nor I could really determine how much farther it can be brought down.

5 THE WITNESS: Right. I think this is a real question. But as I say, and you identified a very real problem, you spend all this money to put in this control system where the bag is filled automatically, sewn automatically, palletized automatically, and then for some reason, whatever it is - a tough night the night before, or anything else - the man driving the forklift truck happens to brush against it. Or, I don't know...you know, there are a hundred things that could happen...
10 somebody shouts at him and diverts his attention for a minute, and we have an accident. That's where you get your dust. Some of the major problems that we encounter are the breaking of a single bag or the spearing of a single bag, and then the unit is carried through a warehouse and fibers drift along.

15 We have a practice to tape each one of those bags, but it doesn't/^{work}a hundred percent of the time. The program then becomes an enforcement program or a work practices program that has to be carried out effectively.

DR. MUSTARD: Have there been any new plants built in North America for the manufacturing of asbestos products?

20 THE WITNESS: Yes.

DR. MUSTARD: Do you have any information about what their control levels are?

25 THE WITNESS: I would say the ones in the asbestos-cement industry are down between...certainly under two fibers, probably one and a half. They don't appear to be that much better than the plants of the late-fifties or early-sixties that have had their equipment upgraded and updated to the best technology.

They certainly are superior to the plants of the late-forties and early-fifties.

30 DR. MUSTARD: Now, another question. As you pointed out in part yesterday, and it has come up in other testimony, there is, of course, a change in the uses for asbestos...substitutes

DR. MUSTARD: (cont'd.) are being put in place, and I'm sure you are aware there is a vast controversy about how new substances should be screened, etc., for their potential health effects.

I wonder if, as an industry, you have any collective views about policies and procedures for screening of new substances in terms of their health effects, and if you have any views about what would be desirable control level policy for new substances which people feel have to be introduced but are shown to be, by whatever criteria you use, to be potential carcinogens?

You have had a vast experience as an industry, had to learn about the business, and I'm sure when you are bringing in new substances you must be conscious yourselves of the problem.

THE WITNESS: Very much so. I would say...and even going outside the asbestos industry...but I think the entire attitude of industry today is to be extremely conscious about it.

Certainly in the United States, because of the way product-liability litigation has changed the whole attitude of anybody who is in business, that is a definitely a very major factor.

You bring up an interesting point that people have accused the asbestos industry of using...but I just think it's a fact of life...people continually talk about substitutes for asbestos, and I think there is quite a wealth of literature out there saying that many of the substitutes that are now being used for asbestos, although they may not have the proven health hazards, certainly should be treated as a dusty material and proper controls put in.

That is becoming a very important factor in this whole situation. People used to say, I am getting away from the stuff because I don't want to spend the money on dust controls. That doesn't solve the problem. It puts the man in contact with

THE WITNESS: (cont'd.) another material that we know little or nothing about, that happens to be a fibrous dust that could very well have some potential hazards.

DR. MUSTARD: I would take it that you would agree with the principle that there is a collective responsibility, both of society and industry, to take steps to ensure that new substances are screened in terms of whether they are potential carcinogens or not?

THE WITNESS: I think, yes, very much so. And even beyond that, to provide some kind of control so there is just...we have the technology and the understanding of how to control dust and vapor and fumes, and whether we know a lot or a little about them, we can do it.

DR. MUSTARD: As you know, Canada made a little contribution to your space shuttle, which is a very sophisticated arm which is designed like a human arm, which, just to advertise it, can undo bolts in space, and it seems to me it can be applied to a lot of these problems with a great deal of ease.

I'm even told that our chairman's alma mater played a little part in designing the equations to describe how the human arm functions that made it possible to go with it, so that even the U of T is useful in research sometimes, Dr. Uffen... despite the fact that you are not associated with it.

DR. DUPRE: For the record, Dr. Mustard, the University of Toronto is your alma mater.

DR. MUSTARD: Let me push this problem, this dilemma for, I think, all of us...certainly it is for the Commission. If you now find a substance which is a carcinogen, which, because there is no substitute, is going to have to be used, and it has not been used in an environment where there is extensive human exposure and you only have the current biological screening systems that you can use, such as animal experiments, do you

5 DR. MUSTARD: (cont'd.) allow it to be used at a level where you create a risk to the people exposed to it, to develop cancer, or do you develop a guideline that says it shall be used, but at a level at which a wise body says there is no likelihood of a risk of increased cancer in the people that co-operate?

10 You may not want to answer that question. It's a dilemma, I think, for any of us trying to face this problem in the future.

THE WITNESS: I'll give you my own personal opinion. I guess I agree with you. I think some type of standard and some type of regulation should be set in place.

15 I think at the same time anyone doing that is taking on a tremendous responsibility because they are going to have whatever jurisdiction they are dealing with, whatever governmental or legal entity, they are going to be creating certain economic conditions within that area that may or may not allow that area to be competitive in the marketplace.

20 So there is a responsibility there. You can just ban the use of everything, or make strict controls so that there's virtually/^{no}exposure, or as close as you can come, for everything, and say we have done our job to protect people. But I think you have to identify, responsibly identify a hazard and a very real risk at the same time.

25 DR. MUSTARD: Let me now pose the control thing, and it gets back to the question of responsibility.

30 In listening to the testimony, I have the impression that the tort liability constraint, if I can use that term, or incentive, depending on who you are in respect to it, is a very powerful one. I would wonder now if a company introduced a new chemical substance into a manufacturing system in the United States, and was shown to increase the risk of cancer, that in view of all

5 DR. MUSTARD: (cont'd.) the evidence which has
existed, and the system, and the tort liability situation, if a
company wouldn't be enormously afraid of the financial implications
in the future in view of the lessons they have learned, and therefore
if this wouldn't be an enormous incentive to the company to either
do everything possible to control it...and this is outside the
normal regulatory process...just the sheer fact of that liability
10 story that has developed over the last ten years...would that not
be a powerful incentive for the industry itself to come to a real
control of any new substance which has a tremendous suspicion about
being a carcinogen?

THE WITNESS: Yes. I think the potential liability
problem is an incentive.

15 DR. MUSTARD: And that's a tougher incentive, in
a sense, than somebody trying to develop a regulation?

THE WITNESS: Well...

DR. MUSTARD: Under these circumstances of a new
substance being brought in?

20 THE WITNESS: Yeah, I guess you could interpret it
like that. I'm not sure I can answer that question with a yes or
no.

DR. DUPRE: Mr. Reis, one line of questioning
only, that I wish to develop. When you were testifying yesterday,
you described your position as director of asbestos policy as one
that involved you in...as you put it at the time...co-ordinating
25 the various J-M companies on how they worked at resolving asbestos
problems, and accordingly with health, safety and environment
departments and so on.

30 The line of questioning that I wish to pursue
with you is intended simply to inform me the kind of relationship
that exists between the headquarters of a multi-national and its
various plants and companies both in the United States and

DR. DUPRE: (cont'd.) outside of the United States.

5 Of course in dealing with multi-nationals I think you will appreciate that to try to understand the lines of responsibility and decision-making structures it is always useful to get information from both sides of the fence. That is to say, both from headquarters and from the local operation.

10 I would take it that as a director of asbestos policy you have the headquarters' perspective on what is going on.

15 Now, from one thing you said yesterday, which basically, as I took it, was an accurate description of management policy responsibilities in health and safety matters in the U.S., it was reasonably clear to me that you are not, of course, familiar with for example the Quebec joint responsibility committees which are, if anything, an even more important part of the health and safety feature in Quebec than here.

20 Now, can I take it from that that you...that headquarters basically...leaves to the individual plant in the United States, or if not, to the subsidiaries that are outside the United States, a very wide latitude of autonomy in structuring their health and safety program?

25 THE WITNESS: Yes, historically that is true. Most recently, and I think it's changing in corporations more and more, you will find a central organization within the headquarters operation becoming more and more involved.

I personally do not have any involvement in it. I would assume that our health, safety and environment department has a very real understanding of the Quebec situation.

DR. DUPRE: I see.

30 Well, now, would they have an employee in that headquarters division who was actually resident in Quebec and basically headed up the health and safety program?

THE WITNESS: Our current medical director is Dr. William Fall, who was the chief physician at the Jeffrey Mine prior to moving to Denver three years ago...I think it's three or four years ago.

DR. DUPRE: Can I ask you this, and if it's a level of corporate structure with which you are not familiar, please just so indicate...what is the reporting line between a plant subsidiary like Johns-Manville Canada and the parent corporation?

THE WITNESS: There is...the corporation, the corporate structure of Johns-Manville Canada does not report directly into the parent corporation. Until our reorganization...and in fact it still is the case within the reorganization...the asbestos fiber division, who are the producers of asbestos in Jeffrey, Quebec, have a general manager who is a vice-president and he happened to be the chairman of the board of Johns-Manville Canada, but his reporting structure was in through a senior vice-president of the Johns-Manville Corporation.

DR. DUPRE: Oh, that would be through the senior vice-president who is in charge of international operations?

THE WITNESS: No, actually of mining operations.

DR. DUPRE: Of the mining operations.

THE WITNESS: The international operations are separate.

DR. DUPRE: I see.

Now, at this point what would be the...what would the organizational chart, if anything, show would be the relationship between a Canadian operation - either the Quebec one or Johns-Manville Canada - and the senior vice-president, say, for occupational health and safety?

THE WITNESS: It would be a dotted-line responsibility. The medical director at the mine, for instance, would report to

THE WITNESS: (cont'd.) his management at Jeffrey, but his lines of communication and direction as far as providing medical services that the corporation requires, all that direction would come out of the health, safety and environment department.

DR. DUPRE: He would be hired by Jeffrey?

THE WITNESS: Yes.

DR. DUPRE: But at that point his job functions would require him to liaise with the health and safety division?

THE WITNESS: Right. His structural, his administrative functions come within the organization up there as far as complying with just employment policy or anything else, but as far as his actual function, his operation, the services he is providing for that organization, all that direction would come from health, safety and environment.

DR. DUPRE: Now, what would be the requirement for submitting to headquarters fiber measurements in a plant based in Canada, for example? Is this something that the dotted line means? Is this something where the dotted line means that any or all monitoring activities are done according to the directives of headquarters...

THE WITNESS: Yes.

DR. DUPRE: ...and that the result of all measurements are sent to headquarters?

THE WITNESS: Supplied both to the operating group who run the operation, plus the health, safety and environment group, the staff function who monitor and have the technical, full technical understanding of what the data mean.

DR. DUPRE: Now, in terms of actual monitoring operations on the site of the plant, let's take Jeffrey as a hypothetical for instance, would it be the Jeffrey plant that was responsible for engaging whatever hygienists and other

DR. DUPRE: (cont'd.) technically-trained personnel that are involved in most operations? Or does headquarters make available hygienists and others to actually go to the site of a subsidiary's plant and perform measurements and related operations?

THE WITNESS: Jeffrey is a unique situation because it is all asbestos and there are five hundred and ninety stations. It has its own industrial hygienist and his staff.

I cannot tell you whether he was hired directly by the people up there or whether the people in Denver got involved in his initial hiring. He has been around for a number of years and predates me, in fact.

DR. DUPRE: Well, if Jeffrey is unique, could you speak to a more typical situation?

THE WITNESS: The other situations would be, we have industrial hygiene facilities at Waukegan, Illinois, at our plant there; in Manville, New Jersey; at Lompoc, California.

I guess Jeffrey is the fourth one.

Waukegan would provide industrial hygiene services for most of our facilities in the central part of the United States. Lompoc, California, where we have a large diatomite mine, provides industrial hygiene services for that mine and then the other facilities on the west coast, and Manville covers the east coast.

DR. DUPRE: How are such services provided, let us say, in a plant like the Ontario plant which until 1980, of course, was involved in asbestos?

THE WITNESS: That was provided, I think, covered by the Jeffrey industrial hygienist.

DR. DUPRE: That, I think, concludes my questions.

Thank you, indeed, Mr. Reis, for your appearance on behalf of the A.I.A. with respect to standard setting.

You may step down at this time.

THE FOREGOING WAS PREPARED
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OF THE INQUIRY PROCEEDINGS

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for proceedings regarding
Dr. Kotin, see next volume,
numbered Volume 35 B

